APPENDIX A. ALL THE RESPONSES OF THE BIOCHEMISTRY STUDENTS TO QUALITATIVE QUESTIONS IN LEARNING ENVIRONMENT QUESTIONNAIRE (LEQ)

<table>
<thead>
<tr>
<th>What do you like most about this course? Why?</th>
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I liked the fact that I learned another valuable skill in making the Web pages. I was opened up to a world of scientific information that is on the Internet.

I enjoyed the emphasis being placed on learning the material and not just doing well on tests.

The many Web pages to find information from. This class can give you information about anything on biochemistry if you know where to look. This can also help you for future classes.

The Web sites. I have learned more about computers in this class than in all of my 20 years of life. They were sometimes pretty fun.

I liked presenting my work to the class—although I think most of us needed more time to do things properly.

It’s innovative. New way of learning kept the subject alive! And it couldn’t have been done with just any instructor.

The instructor is responsible for the success of this experimental course. It requires a unique instructor who is able to make things happen, and there aren’t many out there! Dr. Gilmer is one of a kind!

It is a different learning experience. There is no stressing out over an hour examination.

I can learn at my own rate, and I decide how intense I want my studies to be.

Penny is also always willing to help me.

I think that what I learned will stay with me. My learning was more conceptual than straight memorization.

I was forced to put many concepts together in order to understand a topic. This not only made me critically think; it also made me understand.

The use of technology to facilitate our learning. We will be using technology in our jobs so why not use it in our learning also.

The group work was also helpful in learning. Group members could take advantage of one another’s strong points and learn in that way.

The teacher. She is extremely helpful and proactive to help the students learn the material.

Opportunity to get beyond book learning and get into Web learning.

I really liked the way that it was set up so that you got as much out of the class as you put in.

I liked the individual learning of the course. I felt that it was up to you to learn the material.

It gives us the opportunity to work in groups to complete a task. Course is very fun and interesting, plus you learn a lot.

It used a new style of learning that I had not been exposed to.

Also we were treated as peers rather than just students of the professor.
The different method of teaching - I thought it was very innovative and I have learned a lot by “reinforcement.”

It was worth taking this class. I liked searching on the Web to develop my projects. It reinforced and helped me learn.

I like my instructor too - Dr. Penny Gilmer - she is very professional yet friendly - She treats “us” students as colleagues with a lot of respect.

[Dr. Gilmer] was also very flexible with all of us and always willing to help. She is an excellent instructor.

I liked linking my learning from lecture with information on the Web because it gave me a greater view of the applications of what was learned in class.

Dr. Gilmer is always willing to help and truly cares about the students.

I liked learning about the Web and how to make Web sites.

I enjoyed making Web pages, and integrating previous biology knowledge with chemistry.

I really liked Dr. Gilmer. She is very intelligent and excited about teaching.

[Dr. Gilmer] shows a lot of compassion for her students, which encourages us to learn.

[I liked] the technology used to learn biochemistry.

[I liked] the group setting [with] mature students with interpersonal skills as well as biochemistry.

[I liked] the availability of the instructor to students.

[I liked] no final exam.

[I liked] working in groups.

Incorporation of science and technology in the course. It is something that will help my learning in the future.

I like the bridge between science and technology. That is where the world is heading, and it’s important for students to be prepared for future careers in science and research.

I like that grades were based on work accomplished and projects rather than testing only.

This [grades based on work/projects accomplished] worked for me, but I also felt that there is a negative side to no testing, as there is a lesser motivation for the general class.

What I like most about this course [is] the Web sites.

I love how we are required to work in groups.

I love all of the research that goes into each Web site; and I especially love the sense of accomplishment after the completion of each Web site.

I really liked the teaching style, allowing the students to research a topic and then present it to the class. I feel this is optimal way to achieve understanding.

Working in groups is a wonderful, not only does it help to prepare you for the real world, but if you are willing to listen to others, it can help you understand and confront your weaknesses.

I enjoyed the new way of teaching a course. I learned a great deal about computers, and she was helpful to us [the students].

It enabled me to learn more about biochem by applying the topics to real-world examples.
I liked how comfortable and informal it was.
The instructor treated us like equals and was always there for us, learning about Web pages was neat!
I really like the collaborative learning portion because it was different from the traditional way of learning.
Learning how to write a Web page

<table>
<thead>
<tr>
<th>What do you like least about this course? Why?</th>
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<tbody>
<tr>
<td>What I liked least involved the lack of lectures.</td>
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<tr>
<td>This new process of learning takes a while to get used to and distracted me from the material at first.</td>
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<tr>
<td>Confusion. I didn’t really know what I was supposed to do and what it was supposed to look like.</td>
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<td>There seemed to be so many things to post that I forgot a lot of things.</td>
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<tr>
<td>The book was informative, except it lacked examples for the problems that we were to answer. I brought this fact early on to the attention of our teacher, but she never remedied this by giving the class examples in lecture. This is a must for those of us who had problems answering the questions.</td>
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<tr>
<td>So much work! I learned a lot, but this course was very time consuming! It was fun though. I enjoyed this approach of learning. Just wish I didn’t take it with such a heavy load.</td>
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<tr>
<td>We needed one week of computer html writing to get this class off the ground level.</td>
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<td>It was more work than three credits worth.</td>
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<td>Being used to lectures, it was tough to get used to a class without them. I wish we would have had more lectures from the teacher, but I also realize the students’ presentations are to be learned from also.</td>
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<td>Having to keep up with the constant assignments because I procrastinate.</td>
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<td>That we are never really forced to sit down and think about all that we’ve learned - i.e. tests or quizzes.</td>
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<tr>
<td>It was hard to figure out what exactly it was that Dr. Gilmer wanted from us.</td>
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<tr>
<td>I felt [that] too much time was spent on working or creating Web pages and work on the computer. It took time away from learning the actual material.</td>
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<tr>
<td>There is probably a “Happy Median,” somewhere in the middle, between no computer work and too much computer work.</td>
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<tr>
<td>The fast pace and large amount of work that must be covered in such a short period.</td>
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<tr>
<td>The assignments take up too much time. I spent so much time on my own Web sites and work. I didn’t have time to review other students’ work.</td>
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<tr>
<td>The amount of things we had to do. The course was very well outlined, but there were many things we had to post and with the other classes and responsibilities at times it became overwhelming.</td>
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Appendix A: LEQ Questionnaire

Everything reinforced our learning so, in part, it [multiple type of assignments] was good. Maybe the key is finding a balance about reinforcement and what is too much.

The fact that it is so easy not to learn and procrastinate because of the way deadlines are moved around.

I learn better from traditional lecture and tests. I think [that] with a subject like biochem it is important to have more lectures.

Group work made this class a headache. Cooperation and effort will always lack in groups of western cultures.

The diffusion of responsibility [in group work] perpetuates many members’ laziness, while hurting those who give a damn.

The homework problems were way too time consuming, and I did not feel it aided in my understanding.

The Web pages were helpful for learning, but they took way too long to do well.

[What I liked least was the] paperwork, paperwork, paperwork.

[I didn’t like] a lecture, done by class member/graders with no face and no interpersonal contact.

[I didn’t like] answering questions from the book.

[I didn’t like] some written assignments, such as portfolios and questions from the end of the chapter. They were time consuming and did not help much to learn what I wanted to learn.

I would have like to see more of the traditional lecture style along with the technology.

We had too many projects that were so time consuming that we only focused on a particular subject, not on the “big picture.”

Too much time spent on learning technology (HTML, Web posting, etc.) in the class time.

[We] should have placed more emphasis in class on biochem.

The facilities could be a lot better. Both classrooms need to be improved.

I am sick and tired of having to wait in line to use a computer in the computer labs on campus.

If you get someone in your group who is just determined to be unconstructive and negative, then it seems to lower the morale and definitely the whole purpose of the cooperative learning experience.

[I didn’t like the] lack of tests - didn’t know what to do with information.

There was a need for more structure.

Well, I’ve never been in a class like this before - it took a lot of getting used to. I feel that the pace of the class was awkward - for having so much to do on my own. I would have liked more time rather than having to rush.

I didn’t like the questions that we had to answer from our textbook because the textbook often times didn’t explain things well.

I thought there were too many categories for the Web parts.

What are the best policies, procedures, and activities for enhancing learning that currently exist in this course?
I believe that the Web pages used, homework assignments, and the constant reviews were very important.

[I thought it was good] being responsible for teaching the course (during presentations).

Web pages are nice and you can find some great information.

The Web sites! They helped but in honesty I only know well what it was that I did.

I am acquainted with the information of the other Web sites but will never say I learned them.

Writing papers really shows that a student is learning. It encourages them to ask questions and do their own thinking while getting a firmer grasp on the material at hand.

I love individualizing my biochem Web reports to add the extra touch that is I. Lots of reading outside the textbook, on the Web, helps me learn.

The Web projects were helpful.

[The best policies in this course is the] use of the World Wide Web to research biochemical topics, stating goals, doing homework, evaluating each other helps you see your own need for improvement.

Doing presentations helps us learn in that we have to know enough about the subject to teach others about it.

[The best policies include] using the Web and searching for biochemistry info on the Web.

Development of Web sites - these projects allow us to get into something that interests us, and really go beyond what the book covers.

Projects that related to the learning, they really reinforced the concepts that we were studying.

The best policies are probably the questions. I feel this was because the questions are part of the course that most requires you to learn the material.

The group learning can be very beneficial, as well as the Internet learning.

The Internet provides us with a lot of information that the text doesn’t have, along with new info (the most modern information).

[The best policy is] using the Web. We frequently found new research on the Web that wasn’t in our text. New information is discovered so rapidly [that] the text was already out of date.

Policy: Dr. Gilmer encouraged us to have things on time, yet she offered us some flexibility.

Procedures that worked well: We had to read the chapter so that we came to class prepared to listen to Dr. Gilmer’s lecture. Then we had to answer chapter problems, [and] then reinforce our learning by looking (?) in the Web and developing Web site projects.

More strict deadlines and a couple quizzes [would] be good.

Using group learning is good but everything doesn’t need to be in a group. I think individual work is good too.

I think chapter problems are good.

Making presentations and Web pages really imprints the knowledge.

Lectures a little more often would be nice. Penny is very good at lecturing and to get a more well rounded understanding [of] this was important.

[Best policy was] attendance!
Most proficient in learning is lectures, which are overview of material so material can be broken down and assimilated.

[Best policy] is creation of Web pages.

[Best policy] is Web page developments, based on all the available sources (Web, text, etc).

The incorporation of Web searches along with the textbook gave us A LOT more information and research to pull from.

And participating in group activities was a great experience. It allowed us to learn cooperatively and pull from each other’s experiences.

Rubric guidelines, schedule posting on the Web [were both good policies].

[Best policy was] doing the questions in the book, and comparing Web sites.

[Best policy was] presenting group projects

[Best policy was] using students as co-learners.

The best policy was that scheduled events were tailored to fit the needs of the students (i.e., deadlines pushed back for the maximum potential of the assignments).

I liked the group work and learning from other groups.

I found it interesting to see how others went about their projects.

[Best policy was] group learning even though it doesn’t always work out.

[Best policy was] Web site production.

[Best policy] was integrating the Web with the book.

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<tr>
<th>What policies, procedures, and activities currently exist in this course that you feel inhibit learning?</th>
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I really don’t feel as if anything inhibits learning, however there are some things such as the contributions [to the Web site], which I think was a waste of time. I think if you simply looked at the Web site you would see what was contributed.

Groups are very hard to work with because the more people, the more schedules you have to work around.

I hate the peer evaluation sheets. I sat thinking of how the presentation was done instead of focusing on what they presented.

It is really hard to succeed with group work. There are so many conflicts between students.

I don’t think [group work] should be totally based on your collaboration, but the computer technology aspect of the course is extremely effective.

All the weird math behind the biochemistry is hard.

Posting homework on the Web was more time consuming than beneficial. Trying to write equations on the computer was frustrating (to say the least).

[Having] no tests [inhibits learning]. I think 3-5 tests would give us a little more inspiration to keep us with reading the text, even if they were short, fill in the blank or short essay form tests.

The fact that the concept was so new and the course was so new that not everything was quite worked out yet.
I don’t like how the homework is set up. Anyone can go to the back of the book and get the answers. No one will make all “superbs” this way, but if you’re careful enough, you could still get “very good” almost every week!

Group work is a “win or lose” situation. Sometimes you can get a really good group, and you get a lot out of it, or you can get a group that is really hard to work with and all you get out of it is Frustration.

Some things (problem set, homework) shouldn’t be posted on the Web, [as] the effort involved in posting detailed chemical equations is more than its worth.

[What inhibited learning was] just the amount of time spent on “computer work,” (i.e., creating things on the computer) that could be spent on learning.

The group work can also inhibit learning. Our group didn’t really get along well, which made it difficult to learn as much as we could have.

Learning the technology took so long that the first few weeks are spent learning computers and not biochemistry.

Since we were going to work in groups for the whole semester, in the first two weeks, we should have been given the chance to get to meet our group members and see if we could work effectively as a group by seeing our own interests and schedules, so that in the case the group didn’t fit, we could have the opportunity to change to another group.

I felt there were some groups who work very effectively as a group of four.

[What inhibits learning is] choosing only one topic per chapter causes students to overlook other parts of the chapter.

I feel like with the group presentations they were always rushed and there wasn’t enough time to get the actual point across. I don’t think I learn as well from my peers as I do from a teacher that has studied this for 20+ years.

The lack of grade discipline causes students to possess a carefree attitude. Without tests very few people study (including myself) and some don’t attend class on a regular basis.

The homework problems should either be cut out or the equations should be explained by examples.

[What inhibits learning is] paperwork with essay type questions (excluding the review of the course which is necessary for course success).

Nothing inhibits learning, but some help more than the others.

Posting the homework assignments on the Web was extremely time consuming, especially if it’s a molecule or graph/chart.

So many people just started copying answers out of the back of the book near the end of the semester, which means they weren’t learning.

I think more problems should be done, but turned in on paper. Projects should be posted on the Web.

[What inhibited learning was having] no testing - decreased motivation.

[There was a] lax attendance - on time policy. People showed up late all the time!

We are not required to take notes and are not tested on the notes that we should be required to take, on both on our classmates’ and professor’s lectures.
What inhibits learning is having no tests. [Having no] deadlines and due dates [inhibits learning].

I feel that for such an experimental class design that it should have been more at our own pace. We all learn at different paces, and since we pretty much taught ourselves - it would have been nice to have more time.

[Two policies inhibit learning]: the fact that there are no exams and the ability for us to make Web sites to assess our learning.

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<th>How should this course be changed so that it improves learning and better meets the needs of students?</th>
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I believe that more traditional in depth lectures should be given in addition to the Web pages.

I think [that] there needs to be more accountability for students learning the material.

I think one person should have presented the group project (switching the presenter with each new project). This will ensure that everyone will learn everyone else’s topics.

I found the homework very difficult; I wish we [had] presented the homework problems instead [of the Web sites], and maybe used our Web pages to take a test that the instructor has constructed from the Web pages. I think I would have learned the chemistry better that way.

Lecture should be two days and computer two days, Web site presentations longer; maybe two groups could divide one chapter in half and then they present it to the class.

Examples of problems in lecture.

Maybe lessen the load. Group sharing is a good idea, but maybe ease up on the requirements of groups doing work together. I think students should do their own work - then share with the group. That way each individual can meet his/her standards.

[The learning would be improved with] Having your group answer the questions in the back of the book together. Also [include] the HTML code-writing lecture.

[Having] periodic exams, mixture between Web projects and exams [would improve the learning].

[It would be good to have] more emphasis on chemical structures;

Grades for projects should be individual (This will make everyone involved more comfortable).

Be more organized and have better tutorials for starting out on the Web.

Add a weekly (or biweekly?) quiz that focuses on areas that we don’t cover too deeply in lecture. For example, ask the student to “draw three amino acids” or “discuss xyz intermediates in cycle.”

Another idea is homework-based quizzes - assign everyone the same problem set, and during the week, have them do problems on the board or on notebook paper, showing every step. In this way, students can diagnose what their weaknesses are.

There was a lot of unnecessary, peripheral work that made the class very time consuming. I think I spent more time on this class than any other, but I don’t feel like the time spent was well invested.

Find less time-consuming computer work and more active learning.
Cut down on the amount of homework problems and chapters that need to be covered. Focus more on chapters and allow groups more time for group work to be completed. I know this is college, however, it’s difficult to read the chapter, do the homework, research and post information and get a presentation ready every week.

Mixing in more traditional teaching methods. At this age, we have spent our entire academic careers learning in one way. Exposure to new techniques is good, but relying too much on them can be overwhelming. Just a little bit more of a traditional feel might help students feel more comfortable.

Maybe have an extra hour or two and make it a four-credit hour course. It is a very good class especially because it brings the content of different sciences together - I feel that if we would have had an extra hour to meet for lecture or questions, it could have worked better.

The computer use should be less emphasized and lecture more so that students learn the material first and add to it by researching on the Web.

I think the “Web” part of the class should be a lab hour that meets once a week, three hours like a usual lab. Then still have three hours/week of lecture and the course can count for four hours rather than three. With a longer computer period, projects can be fully explained, and it will also give time to have tech help sessions. Also with three lecture times, there is still enough teacher/student information.

A course with no exams must have a very strict attendance policy. If this Web-mediated instruction continues I would require less presentations and extra work. A formal lecture should take two or three days a week - and then tested at the end of each chapter. Perhaps it could be a ten-question quiz at the beginning of Friday’s class, followed by two twenty-minute presentations on the following chapter.

I don’t have the answer to that [what would improve the course]!

There should be some form of quiz or test that allows the instructor to determine the student’s education and for the students to self evaluate his or her own preparation for their future.

Place more emphasis on biochemistry. Maybe only students with technology experience should be admitted, or organize technology-learning sessions outside the course.

Incorporate more lectures into the course. Perhaps traditional lecture two days/week and computer lab/presentations one day/week.

Also cut down on the amount of projects, to maybe four due per semester.

Increase amount of chapter problems done, turn in on paper, and at least two exams during the semester to make sure students are learning the material.

Smaller groups or more individual work.

Less emphasis on goals and contributions and more emphasis on questions and text material.

I feel that the groups should be more specific in their topics, and that more time should be allotted for presentations.

A few tests and a little less focus on computers and technology [would improve the course].

The only change that should be made is another assessment mechanism (i.e., quizzes) to gauge the progress of the students’ ability to understand the basic topic of Biochemistry.

[What would improve the course is] I think fewer deadlines, more at the students’ pace. Perhaps a little more lecturing.
Change the textbook and allow more time for posting, such as Web sites, questions and reflections. Also give groups a theme so that students can choose groups of interest and that will decrease many conflicts (like in the STS class, we chose groups by topics of interest).

Would you learn more chemistry if the instructor did more traditional lectures instead of students presenting their Web sites? If so, how would more lectures help you learn? Did you study with your learning group (or other students in our class) outside of class time? If so, was this helpful?

<table>
<thead>
<tr>
<th>I believe that I would learn more chemistry [if the teacher lectured more]. However, traditional lectures often fail in getting the message over to the students about how what they are learning relates to the real world.</th>
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<tbody>
<tr>
<td>I think that is a good idea [if Penny lectures more]. I learned a lot from Penny’s lectures. The information was clear and organized.</td>
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<tr>
<td>Yes, I learn when I can see a problem being done and someone explaining it.</td>
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<tr>
<td>Provide an additional day of lecture that way the teacher doesn’t have to cram all the chapter information into one day. They could provide examples to questions in the book and maybe even use computer animation. One day doesn’t cut it? But don’t take away the Web sites.</td>
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<tr>
<td>No [the teacher should not lecture more], I learned more this way. It is a great motivator.</td>
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<tr>
<td>Yes, I would have liked a twice a week classroom lecture by my teacher and just my teacher. And then a four-hour block of computer lab time to receive student presentations and work on my own computer work.</td>
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<tr>
<td>I think that Dr. Gilmer was excellent!! I would have enjoyed two lectures a week from her and two a week from students. Also, the longer student presentations were the most beneficial.</td>
</tr>
<tr>
<td>Possibly [have the teacher lecture more]. People learn differently. Hearing the material and writing it down as you take notes helps me a little. The lectures that were presented helped to fill in the gaps from my own readings.</td>
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<tr>
<td>The presenters usually did a fine job researching information links and graphics to help us understand the subject.</td>
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<tr>
<td>So, for me, the variance of lectures, readings and presentations of Web sites worked well.</td>
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<tr>
<td>Not necessarily [have the teacher lecture more]. In this course we did the work, like the book readings and problems, and the projects [that] we did got us more interested so that we learned more. I think this method is very effective even with a minimum of lectures. Everyone had enhanced access to good info this way.</td>
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<tr>
<td>However, there should be more lecture time! Maybe only two presentations per group.</td>
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<tr>
<td>I’m not sure [if it would help the learning if the teacher lectured more]. There has to be a better way of teaching the chemistry side of things. I don’t think straight lectures would help, perhaps more assignments focusing on the actual chemistry rather than the stuff the book focused on, i.e., deriving equations.</td>
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<tr>
<td>Probably the lectures could be used to better explain how things work, sometimes the computer or the text isn’t adequate.</td>
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<tr>
<td>No, [my teacher should not lecture more], I believe this form of teaching and learning is more beneficial than traditional lecturing. Our atmosphere is more laid back, no pressure; it seems easier to interact with the professor.</td>
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I probably would simply [want more lecturing] because students only presented three out of their ten Web sites. I didn’t have time to look at the other seven of each group.

I feel I learned a lot from the students’ presentations, so this is a good idea. However, my instructor is an excellent teacher - very organized and calm - so I think I could have learned a lot from her too - if she would have lectured twice a week - or lecture one day, second day for open questions and answers about homework problems, third day -> group presentations.

Yes, oh yes, [I would like more lectures].

Yes, I learn better from structured relay of information, students’ presentations are incomplete and lack real understanding that is important for teaching a subject.

Yes, [I would have liked my teacher to lecture more] by giving a broader look at each chapter. The students, most of the time, chose their own topics. Therefore, a complete chapter may not have been discussed.

To do that much work and energy into a Web site and not be able to present this would be demoralizing. Without traditional lectures there would not be any structure or organization to this material to be learned.

Yes, [I want my teacher to lecture more], but only if traditional tests were given covering the lecture topics.

I believe the instructor should have done most of the presentations. Presentations by the students did not help understanding the topics, probably due to lack of teaching experience.

Yes, [my teacher should lecture more], because it would not focus on one aspect of one topic, but would give me a greater and broader understanding of the material.

This class may not be as comprehensive as a traditional lectures, however, I feel that after the class is done and over with, that I will have remembered and retained just as much info as a student who has taken a traditional class.

I really feel that the info I have learned I will be able to apply in my future classes more so than in a traditional class.

No, I disagree, [my teacher should not lecture more], but I know for a fact that I did not learn as much or achieve as great of an understanding from other presentations as I did in my own group’s.

[My teacher should not lecture more], because you learn from these Web sites.

Yes, [my teacher should lecture more], because the student presentations often went on too many tangents.

I think more traditional lectures would have helped link all of the individual group lectures together - it would help the chapters [to] flow together, rather than be separate drops of information.

Yes and no [about my teacher lecturing more]. We learn a lot from the Web sites and the lectures. It’s just that the book isn’t that useful.

**Did your writing your “goal” statements and “contributions to your Web site” in your electronic portfolio help you with your learning, or was it only an exercise to do? If you did learn, what did you learn about yourself as you did it? Would you recommend Dr. Gilmer continue the electronic portfolios in future classes? How could this assignment be improved?**
It became an exercise to me. I, for one, kept my goals in the forefront of my thoughts and knew what I contributed. However, I believe that they were instrumental in helping the teacher gain a better understanding of how she could present things in a better format.

Focusing on the goals was helpful. But I think [that] there needs to be more accountability for achieving these goals (on a weekly basis).

Only an exercise to do.

[Writing my] goals was an exercise.

Contributions [to the Web site] were somewhat important. It provided a second chance to go over what you learned, how you learned it, and also provided any comments to the teacher on how learning process was achieved.

The contributions were basically a recap so they made sure that I could convey what I had written on my Web page in a more? and informed manner.

The goals, I think, students already have in mind and there is no need to put them in writing but for an experimental course I think it was important to inform the instructor of our goal-reaching status.

I do not know if writing a “goal” statement added in my learning. Maybe a group goal statement added would help bring the group together faster.

It was a nice reflective/self realization exercise. It did make me look for possible alternatives to specific problems.

I believe the portfolio goal statements help us to have something to work toward. Stating your goals helps to keep you on track and give satisfaction when they are reached.

I learned that working towards a goal is easier (more efficient) than working till the semester is over at whatever needs to be learned at the moment or for the next presentation.

Yes, I think so [that I learned by reflecting by writing goal statements and in my portfolio]; I learned that I am very bad with procrastinating. Yes... do the electronic portfolio. Could be a little more user-friendly.

The goal statements were good - they helped me to think about my reasons for taking this class and what I wanted to get out of it.

On the other hand... the contributions to the Web sites were more busywork than anything else, and I really didn’t see any benefit.

In the future use the portfolio! Maybe there could be an on-going project (like our “final question”). Also, have students use the portfolio to show how their work has improved, not just what they’ve learned. Make students think about the quality of their work and contributions, not just quantity.

[Writing my goals and in my electronic portfolio] was mostly just an exercise. I felt like I had already posted what I learned on the Web page.

It was a good reflection, but most of my learning came from the already done Web page.

Yes, it keeps you focused on accomplishing your goal. A lot of times students take a class not knowing why they are taking it. This way you set your own personal reason.

The goal statements were only an exercise. The contributions [to the Web site] actually helped my learning. It helped me develop my Web site in a more useful format as well as review the information I found.
The goal statements helped me with my learning because I kept in my mind the objectives I wanted to get and of this class.

I felt the contributions of the Web site were repetitive of our own learning - since anyway every group member had to develop a part of the whole group project and by doing that I felt I was already learning.

Yes I recommend the instructor to continue with the electronic portfolios but instead of doing own learning for each project, do an assessment midway and at the end.

It was only an exercise because I knew how I contributed to the Web page so there was no need really to state it in a portfolio.

[Writing my goals and in my electronic portfolio] didn’t really help.

I think the “contributions to Web site” were merely an exercise. The goal statements help focus efforts and allow a student to reflect back on their earlier state of education, thereby gaining a sense of accomplishment.

The goal statements did not help me at all, but writing the contributions helped me reflect on and remember what each chapter was about.

The portfolios should be continued. It makes the student realize what they really did as an individual.

Paperwork, paperwork, paperwork, Posting goals is not that difficult and could have a learning experience for younger students /

Contributions are OK but beyond identifying own portion of page.

Rubric is in Web site and this is redundant.

Goal statements helped learning; contributions [were] only an exercise.

Yes, I would recommend continuing electronic portfolios.

The “goals” helped me to set my priorities, and stay within these priorities, throughout the semester.

“Contributions,” it was just an exercise to do.

By mid-semester it was more of an exercise. It’s a great idea, but probably should be done three times a semester or when projects are due.

An exercise.

Yes, the portfolio helped with my learning. Often times I wrote my contribution without looking at my research, which means that I really must have learned the info. Not only that, but my contributions were sometimes better than the Web site in terms of fluidity of ideas and concepts.

I do not feel that this [writing my goals and contributions to Web site] enhanced my learning at all. It just felt like one more thing to do. I feel this should not necessarily be continued.

I think more time should be spent on the content of the Web pages.

It helped somewhat - it helped me keep track of how I was doing in this course. Yes, I think the teacher should keep the portfolios.

For me, it felt more like an extra exercise to do. I understand the reasoning behind it - but don’t think it worked.

The portfolios were a convenient way to keep all the class material together - however, they were temperamental.
It was really an exercise to do. I learned that this class takes a lot of time (meaning time needs to be put into it).

You should continue with the method.

It was only an exercise. I discussed my goals and improvements with my friends that were not in the class.

**Was it helpful to focus on particular aspects of biochemistry as you developed Web sites to help you learn biochemistry in depth? What could have improved your learning? Should we have dedicated more days to learning the Web and our Curriculum and Instruction Web site at the start? Were there too many Web sites to create?**

I believe that it was helpful to focus on particular aspects of biochemistry.

Some additional lectures [would have helped my learning], I believe that enough time was allotted to learning the Web and our Curriculum and Instruction Web site.

I believe that too many Web sites were created. Maybe one every other week.

I am somewhat fearful that my learning was not complete enough.

I actually learn a lot of each subject I did a Web page on; I just didn’t learn the chemistry or much of the other subjects my group concentrated on. I think it’s good to do a Web page on each chapter.

The process [of making a Web page] might go faster if the instructor doled out specific topics to each individual. Then the instructor can put these together for a complete chapter tutorial.

There were a lot of Web sites but I enjoyed them. They were time consuming. As for me, I came into the class computer illiterate and am learning with competency.

The beginning was rough; I had to learn the computer as well as the concepts. Maybe provide a recitation period for computer skills to be taught.

Handouts on the different ways to upload, save pictures, create Web-sties, etc.

Yes, it made it more interesting and fun to learn. I wouldn’t change anything in terms of the assignments. There were many Web sites, but I don’t think there was any way around that.

I thought ten Web sites was a perfect number. Yes, [it would be good to have] more learning Web code in the beginning.

Less Web sites would have been better.

Yes! Many things are exceptionally important to learn for some people going into certain fields (DNA for genetics, metabolism for doctor, etc.) Some are not.

Plus it would be tough to create a detailed Web site on a broad topic, more time learning HTML code, Web production for at least four class periods, maybe delete two Web sites so we’d have more time to make them better.

Yes, it was helpful. Doing summaries of others’ Web sites so that you become acutely aware of what info is readily available. Yes, definitely more time to learn the Web.

Next time [I suggest that you] have tutorials prepared to teach students the Web and Curriculum and Instruction site. If there were fewer Web sites, but more evaluations of others evaluating presentations as well as doing summaries that would be as effective, and keep the students
attention to what was going on, fewer but more substantial expectations for Web sites would be
good.

Yes, too many Web sites. Maybe [do] five to eight [Web sites] per semester in the future. Have a
Web tutorial session. Have students go into the Curriculum and Instruction Web site and create
mock dialogue journal, portfolio, critical reviews and group work postings at the start of the
semester so technology issues wouldn’t come up later.

There were definitely too many pages to create. It could have been changed by having a couple
of more in-depth projects assigned, rather than so many less complicated projects.

The Web can be intimidating, but I don’t think that it should be addressed in this class. A lot of
the stuff covered at the beginning should be basic knowledge.

I did learn in depth on many things via the Web pages.

Improvements? - Cut out the contributions and limit presentations to every other Friday. This
extra day could be another lecture day.

Yes, there were too many Web sites. I noticed that a lot of students copied their
lecture/presentation straight from the Web site they found, which really didn’t show one that
they tried to expand their knowledge. With all of the sites to create things often got out of hand. I
fell behind a few times because I had to juggle this course with my others.

I feel I learned a lot about the topics I covered, but little about ones I didn’t. There may be too
many sites.

Oh Yes it was! [Writing about my goals and contributions to the Web site] was helpful.

Maybe we could do our Web site every two weeks; instead having to do Web sites every week. I
found doing the Web sites very helpful to my learning but if we had to do a fewer number, it
would have been better in times of time wise and meeting all deadlines and responsibilities.

[Writing my goals and contributions to the Web sites] helped [me] to focus on particular aspects,
but one learned only that one aspect. There were not too many Web sites to create.

Maybe two Web projects instead of three.

I didn’t understand rubric etc. and how that was to be incorporated into the portfolio
contributions to Web site. Maybe more at the beginning. Examples would be good.

No (to question on more days to learning the Web), and yes (to question on number of Web
sites).

There were too many Web sites; maybe we should have had some other kind of project every
once in a while.

I did find that making the Web sites did help me learn the material instead of memorize it.

(The focus on a particular subject was helpful).

The technology needs to be learned first. This is what slows things down for the future?
A breakdown of Web site “subjects” to more from for each group for the team.

Present sites in the order of the chapters.

No, because I spent more time focusing on the narrow topics rather than the whole picture. For
example, I learned everything about pyruvate, cytochromes and aerobic respiration but could not
tell you what else was covered in those chapters in the book.

Ten Web sites were good (not too many and not too few) for one semester.
A prerequisite for this class (which I was fortunate enough to do) should be an advanced level computer programming class (e.g., CGS 3408).

[Writing my goals and contributions to the Web site] did not help [my learning], sometimes the topics were very broad.

It would be helpful to concentrate more on the texts, journals, etc. than the Web. Yes, learning the Web and Curriculum and Instruction Web site beforehand, it might be better.

I do not think there were too many Web sites.

Yes, I learned certain topics in great depth. But there were too many Web sites to create, so I don’t feel like I got a complete understanding of the material.

Too many Web sites.

No, spent too much time trying to learn Curriculum and Instruction Web site and how to post, etc. I felt that it should have been explained in class, but that out of class time, extra help sessions could be available for the technology aspect.

Maybe set up help with Libby sessions a few hours the first few weeks. I felt class time should be biochem. time, and HTML learning.

Yes, it was helpful to focus on particular aspects of biochem. The reason being is that it is impeccable to write about a single aspect of biochem without having to explain five other biochem topics. As such it is much easier to learn these related topics in reference to my main topic.

Yes, more time and simpler explanations should have been spent on Curriculum and Instruction Web site for those of us who are computer illiterate. Yes, sometimes it did feel like so much work was being piled on you that you couldn’t develop and improve and improve on other projects.

Yes, it helped to focus on particular aspects because it made biochem. more tangible.

No, we shouldn’t have spent more time in learning Curriculum and Instruction Web site, and yes, there were too many Web sites.

Yes, I feel that I learned a lot about the topics that my group made pages on. However, I don’t feel that I know much about the other topics in the chapter. More lectures would improve my learning of all the topics.

Yes, learning about the site early in the semester would have made it easier later in the semester. I think the last Web site may not be necessary because it is being rushed, and people have a lot of work to catch up on in this class and others.

Yes, the Web sites were helpful. Maybe more time should have been spent on learning the Web because there are some students that still don’t have it.

The Web sites definitely helped me learn biochemistry.

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Did you learn from members of your collaborative group? Did you teach others in your group what you knew that helped their learning? Were you satisfied with your own participation and that of your group members in the group work (both the creation of Web sites and in the presentations in class)? Do you think it would be good to switch group members part way through the class? If so, how do you think it would help?
I learned a lot from the members of my collaborative group. At times I did help with what I knew and vice versa. I really did not study with the members in my group except to discuss our Web page assignments. I was satisfied with my participation and that of my group members. I do not believe that group members should switch.

I think the groups are helpful, but I do think that switching members is a good idea because it allows for more exposure to new points of view.

No to all [questions on collaborative groups]. Maybe about 10% of learning was shared between us. I think if we had that dialogue type chat room available, it might have helped. Something like ICQ, Yahoo Pager lets you know when your buddies are on-line. That could have helped a lot in the beginning because you can talk and work at the same time.

I liked my group; most of the time we helped each other. I don’t think I would have liked to switch group members. We mainly helped each other with technology problems. The research and Web site productions were all up to us as individuals. We never studied together.

Not too much, we were too busy trying to get our own work done. Didn’t have too much spare time. I’m sure it would have been helpful had we had the time. I over participated and they under participated. I wouldn’t switch members; it’s hard enough to adjust to the ones we had.

No, don’t switch group members in the middle of class!! It took a long enough time to make my group really functional.

No, I didn’t’ learn from other group members. I was satisfied with my participation. I think that working in groups while still maintaining individual grades would be most beneficial.

I wish we would have sat down more often and talked more in depth about our subjects. The discussions we had were usually to help us link ideas between Web sites. Having people to talk to did help though. Just using the words we read in books in a conversation helped me to summarize my ideas. Staying with the same group, if everyone works equally, is better because you get to know one another and discern how each learns.

Yes, yes [to questions on collaborative groups]. Did not study much? Guidelines to promote studying with others would be helpful in future. Not satisfied with my participation, but very satisfied with my partners. No, do not switch groups. Could create chaos. Maybe have two or more groups work together on a big Web site and project, etc.

a) Not much- we had more of a “you do this, I’ll do that” style, b) Not really, c) No-intended to though! d) more so with some members than others, but there will never be a perfect group! e) No.

I hate group work. I always end up doing more than my share of the work because I don’t feel like I can trust my grade to somebody else. At the same time I don’t want the people in my group to dislike me because I gave them a bad evaluation. We did not study together, and I think I would have been better off on my own.

I did learn from my group members, and I did teach. I did not study with my group although we communicated outside of class often. I was satisfied with [my] group and myself. I wouldn’t want to switch in the middle of the semester.

Our group consisted of four people, however only [one other] and myself were ever present. But that member who was present taught me a great deal and we often studied for this class and others. I was satisfied with my participation because I was probably the second highest to one other member.

I didn’t learn that much from my group. It was the blind leading the blind. Besides, we didn’t meet that much.
Well, I did not have good luck in my group - since we were only two and the ? my other group member quit. But I could see other groups learning from each other and helping each other and I envisioned a good outcome.

Yes, I learn from my members and I think I thought them no-ething (?). We studied together at the beginning but our schedules were hard to match so we stopped.

Didn’t study together - hard to fit schedules. My group helped me with the technology aspect of stuff.

Answered no to following questions (learning in collaborative group; teaching others in group; studying with group members, and satisfied with group participation).

Switching group members would not have been good because the adjustment period was difficult in the beginning and after a while we knew what to expect. Yes, I learned from my group.

Time spent with group outside of class was mostly organization, not communicating on learning material but breakdown of assignments / many, many E-mails/ I was very pleased with group I was associated in all aspects of course.

Yes, I had a good group and learned a lot from them. Only twice did we meet outside of class --- and this was for our last two class presentations. No, do not switch group members (would ruin the “chemistry”).

Due to the fact that our interests were not very close did not help to learn biochemistry. However, it helped to develop skills necessary to work with other people, e.g., understanding, respect for the other’s opinions, learning how others learn.

Not really. There were simply too many projects to do, so we just split them up and posted our topic individually without much discussion. Fewer projects should increase learning.

I learned from them, but we didn’t spend out of class time together. We coordinated what we should each do.

Yes, I learned a lot from my group especially on the technology issues. Yes, I studied outside of class (more so for the class than any other), however not with my group. There was only one group member who I felt should not even be in this class, let along in my group.

Yes, I learned from other members. Yes, I taught others. No, we did not study. I feel that it could have been better if I went to Dr. Gilmer and discussed with her my concerns about one of my group members.

I learned from other members in the beginning of the course, but not the end. I tried to teach [the] others some of the stuff we did in class. Participation in my group was scarce, especially when we lost our cohesiveness. I don’t think it would have been helpful to switch groups because then you need to learn even more people and how they work.

Yes, yes, yes, yes [to the questions on collaborative learning]! It was very helpful to learn/study with my group members. I feel that I could have contributed more - my group members were great! Switching would allow us to touch with different people and take different roles in creating the pages - but working with the same people - we seemed to keep the same positions...

I only learned from one out of three members in my group. I really only worked with that one student. Such as studying and posting Web sites outside of the class a lot. This was helpful. I think that the other two members of my group did not participate like they should have. Maybe you could switch half of the group partway through the class.
It seemed students were competing with other groups. I think if someone needed to switch that is fine. However, if a group is working, then why break it up.

Did answering some of the chapter problems and posting them on the Web site (or turning in your answers on paper) help you learn biochemistry? Did you tend to work individually on this, or did you work as a group, helping each other when one got stumped? If the instructor had made up her own questions rather than using the questions from the back of each chapter, would that have helped you learn? Would it help if the instructor had posted the correct answers on the Web, after the assignments were done?

The chapter problems did help. They were difficult without the lectures. I tended to work individually due the schedule conflicts. I don’t believe that the professor making her own questions would have worked.

I mostly did the problems on my own. I thought that a lot of the problems were too difficult. I had to look at the answer to figure them out.

Yes, they did help me learn and it would have helped to see the correct explanation in class, not just posted. I used the computer for a lot of my homework also.

We always worked individually on this - sometimes we helped each other. As stated before I learn by example, and the book and teacher lacked in that area. The back problems or made-up teacher problems would be helpful, but only with examples provided to show guidance in the correct answering of the problem.

Thought the questions were sometimes hard, they helped [me] learn. I worked individually. I think it would be better if the instructor made the questions because I think they will do a better job of highlighting what we should know.

As said before, chapter questions should be done in groups. I did them individually because it was easier for me this way.

Putting the questions on the Web was awful!

The questions in the book were hard.

I would rather Dr. Gilmer made her own questions.

I worked individually on my questions.

Yes! I always work the problems by myself but looked at other’s explanations to the problems I didn’t do, working problems and answering questions forces you to dig deep and draw conclusions. The answers were in the back of the book though sometimes no depth was given as to why. The questions within the chapter were excellent and made you pull from different areas in the chapter to answer them.

Yes, and I worked individually. Yes, and if maybe there was some overlap on questions that you made up so the groups could interact more. Posting the answers and explanations would help.

Doing the homework helped, but not posting. Definitely require students to do their homework in the future!

Individually, then going to the instructor for help.

Yes, but only if everyone had already submitted.
NO! The problems from the book were horrible! Posting them on the Web was a pain. I worked them on my own. The other person in my group was clueless for the most part. Yes, I think the instructor should make up her own problems.

Yes, it helped and I usually worked independently. I think I would have rather that Penny Gilmer made the questions up. The correct answers might have helped me learn.

Yes, I believe that [was] where the majority of my learning came from. I worked with a group member. The questions from the book were hard (?), for the most part. Some questions were really difficult and required using textbooks from other classes.

Answering the questions did help. I worked individually.

Yes it did. Worked individually because with my group member - we only met to do group Web site projects. Other group member quit at the end, so I had to learn to have all the responsibility on my own. Yes it would have helped if the instructor posted correct “development” of correct answers on the Web.

Yes, it did, because it was adding to textbook reading in order to solve them. Work individually.

Yes, the instructor question would have helped learning. Yes, correct answers posted would have been good.

Didn’t work as a group. Answering questions did help - it was the only thing that required the student to “learn” the chapters. Correct answers on the Web would maybe help.

Yes, to answering some chapter problems; worked individually; maybe, to question on instructor making up own questions; yes, to instructor posting answers to problems on Web.

No, the problems have not helped me at all. I did work individually. Penny’s questions may have been more relevant to the information presented.

The questions in the text are useless, created problems with examples and solutions not just answers for example would be helpful. Posting of solutions with answers would be helpful.

The best thing about the questions was for Chapter 4 and 5 [from the textbook] when we made up our own. I wish we had done that more often.

Not really because the questions at the end of the chapters were sometimes different from what we were doing in class. Yes, the last two are good suggestions.

Answering chapter problems is great, but difficult to post. Should be turned in on paper. I tended to work individually but discussed problems with group members when I was stumped. I prefer chapter problems rather than made up ones. Also the answers were in the back of the book, so if anything was posted by the professor, it should be the steps to get to the answer (book didn’t do this).

Didn’t feel that the questions helped learn chapter material. I worked individually. I don’t think post[ed] answers would have helped. When questions were done, people didn’t go back.

I learned individually and it was very helpful answering the questions. Maybe being assigned additional questions would aid in my having learned even more.

No, I didn’t individually. No I didn’t think so, unless it was ideally directly with the chapter we were and topics we had discussed in class.

No, I worked on problems by myself. Yes, it would have helped if teacher posted right answers but using book problems was a good idea.

I worked individually - these questions blew my mind! I think instructor-generated questions would have been more pertinent to my learning. Posting the answers would have been great!
Appendix A: LEQ Questionnaire

No, I usually worked with and helped another group member. The questions often times asked things that could not be found in the textbook, and we had to use other textbooks. You should make up your own questions and also post the answers on the Web.

No, the questions seemed like a far left field in relation to learning.

How was it for you trying to learn the technology of using the Web as a search engine, using our Web-MC Web site, using our Curriculum and Instruction Web site, and learning how to develop your own group’s Web pages, while trying to learn biochemistry simultaneously? How could this process have been improved, to enhance your learning? At what point in the course did the technology part of the process become more straightforward? Should we have spent more time in class near the beginning of the course to learn this? One possibility is offering this course as 4 credits, with a 3-hour laboratory as the 4th hour of what is usually a three-hour class. What do you think of this idea?

It wasn’t difficult because I knew about some of the technology already.

That is a good idea. I was distracted by the technology. Teaching it separate is a good idea.

Yes, definitely I think if [you had given us] an example of exactly what you wanted for a Web page and a presentation of a Web page [it] would have cleared up a lot of confusion. I never knew if I was doing anything right (get Elizabeth to teach it-she was very helpful).

About the 3rd Web site we all had mastered Web site creating but the beginning was really rough! The lab idea may be pretty cool. You could teach technology and have the Web-site presentation in there! I really like that idea!

Technology was fun and insightful! It eventually becomes I should become second nature. Should definitely be a four credit hour course! Cheers!

I quickly grabbed the HTML code because at first I found it more interesting to learn than the biochem. Then the HTML code was getting in my way the second month because I was still learning it where instead my focus had been heavily on the biochem. The second half of the semester I use the HTML to my advantage to perfect by Web reports. I made HTML a tool of learning to help build my knowledge of biochem. (Damn, that is a good last sentence).

About three weeks into the semester, I was more comfortable with the technology. If this class were a four-credit class, I would prefer more lectures.

I had used the Internet before so it wasn’t too bad for me. Learning how to create Web sites was the toughest! If the first few (4-5) class periods were used to learn technology no lab would be needed. The Curriculum and Instruction Web site was organized well and was easy to work with after learning where everything was. At the 3rd or 4th week Web sites became easy to create.

Learning the technology was tedious at first, but rapidly became easier. Tutorials to jump-start the learning curve [would have improved my learning]. [The process became easier] once I learned how to set up Web site and found one that was easy to use. I think it is a good idea for the lab to be one hour, but at the beginning of the class, you could also set up extra class periods, and possibly change the meeting frequency during the class to two times a week for two hours, especially at the beginning. This would maximize the learning time and potential, and get the students started off quicker. At the beginning of a semester the students have more “free” time to set up the Web sites and do that part of the learning process, so that should be taken advantage of.
a) There’s enough biochem on the Web, I liked it! b) ? c) About seven weeks in. d) Yes, see my response to #57. e) Wish we had done that! As long as lab isn’t too difficult! EXTRA: Use Web for groups to: post evaluations of group Web sites; Post assessment of their own projects. This will use less of instructor’s lecture time! Definitely add quizzes/tests or some other direct test of knowledge. This is so critical in the first of a two-semester sequence, especially since students will draw on this knowledge in a grad (medical) school.

That would probably be good. The Web stuff is pretty basic. Most of it people should be familiar with anyway. I think some of the stuff we did, however, should not be part of a biochem class.

This is where the peer team part came in. I think about five weeks into the course I could operate all of the important functions of the computer. Yes, four hours would be a good idea.

I enjoyed learning the technology, maybe in the future all lectures can be held in the computer laboratory and we can take time to find sites at that time and present them to the class. Three hours are just fine.

A four-credit class might help more. Learning the technology and finding time to do the work was hard.

a) It was good. It taught me a lot to be patient and to envision a good result at the end. b) Maybe have extra help sessions, c) After first month - month 1/2, d) I think the time was fair, e) I vote for offering this course as a four-credit course. Penny: thanks for everything I learned from you and this course.

It was fun to learn technology and biology at the same time.

At first it was hard for me to get the tech, but I eventually figured it out. I think the lab idea is great. I have been thinking that the whole semester.

Tough at first trying to learn technology and biochemistry; Good idea on changing to four-hour course.

Difficult at first but became second nature. ~ Midway it became straightforward. Having the four-credit course might be something to toss around.

With the course as four-credit hours, you would probably lose student enrollment. This would constitute six hours of in class time per week. I could see a few additional classes in the initial days of the term to learn the technology. It may be that a basic course in computers should be a prerequisite for the course. As time goes on students in the class and future enrollments will know more and more technology.

Do nothing but computer technology the first week. Make Web page “shells” for at least the first three or four Web sites. Make individual pages within a site and link them together. Link sites together via a main group page, insert gif files, etc. See how it works within the Curriculum and Instruction Web site. All groups’ pages should be accessible for class viewing via the Curriculum and Instruction Web site without having to go to Angelfire, Geocities, etc.

There should be a breakdown of the topics available for each group to select from the Web site projects. Web sites should be presented in order as to follow the text chapters and lectures. Unprepared presenters understandably happen for a variety of reasons and are unavoidable. Fine, let an individual lose a few points for late presentations.

A further breakdown of group’s subjects for each individual should be assigned or selected from a list of topics. At least for the first initial pages, so it is not a combination of subject, technology, and interpersonal skills being challenged at the beginning of the term.
After the third group project, HTML language and computers started to click and I knew what to expect and do at that point.

That is a good idea.

Difficult to learn both at once.

More time should be spent at the beginning learning technology.

I felt comfortable with technology by mid-semester.

The idea of adding a lab is great! It would solidify the learning.

I think the instructor needed to have a firmer grasp on the usage and capabilities of Web learning. We needed a leader, not a co-learner. The Web is a useful tool, but learning it should be part of other classes, not biochem.

It was awesome. I really felt comfortable and confident in the use of the Web for doing research, something that can be seen in every project I do now - even not related to this class.

This was a good experience; towards the end yes; I think this idea could be very productive.

It was a lot of info. All at once but I got the hang of it pretty quickly. No a lab is not necessary.

It was difficult and confusing -> computers hate me! It felt like I was taking computer science + Biochemistry, but not getting credit for one of the classes. This was difficult because I’m taking 17 hours this semester, but it felt like 20! Good idea about the three-hour lab!

Maybe we could have spent the first two weeks learning the Web, and then we could have done much better with learning the material.

It was sort of like wading in a river to get to the tributary to get to the ocean to get to the island to get to the lighthouse to get inside the lighthouse to eat dinner. The part where we had to put in that password that was just a series of letters - both upper and lower case. Ugh. I have eight passwords for school related sites, not to mention bankcards, logging onto the Web, job passwords. There were times that I was near a computer, had my book, but couldn’t remember all of the passwords and steps for the Web site to make entries.

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