

LTTS Overview

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Learning to Teach with Technology Studios (LTTS) supports teachers through one to one mentoring in courses offered over the Internet. Each LTTS course begins with a curriculum problem that teachers commonly face and then supports the teacher in developing a lesson plan that includes the use of technology to address that curriculum problem. The one on one mentoring assures that the lesson plan developed will be appropriate for the teacher's classroom.

The focus in the course is on the design of inquiry learning, a student-centered approach to teaching that emphasizes engaging students in inquiring into issues and problems. The LTTS courses themselves are designed as inquiry courses: teachers inquire into solutions to addressing the curriculum problem in their efforts to design a lesson plan. In the LTTS courses teachers:

- Learn about student centered, inquiry learning
- Learn how to support students in using technology in the classroom as a tool for their inquiry
- Learn about competency-based assessment
- Learn through doing and reflecting (designing a lesson that uses technology as a tool for inquiry and provides an analysis as to why it is a "good" lesson).

Teachers taking LTTS courses may start at anytime and work at their own pace. Typically teachers prefer working that way because it permits them to study and learn as they find time in their busy schedule. However, LTTS will also support teachers working in teams if that is desired.

In taking a course, the teacher will submit 5 to 8 pieces of work, including the final lesson plan. This work is evaluated by the mentor who provides feedback and suggestions based on his or her teaching experience. All of the mentors are experienced teachers.

Design Principles.

Four design goals guided, representing 15 design principles, guided the development of the LTTS environment.

Relevance to the teacher. Certainly this is a basic consideration for any professional development program but it is one that is certainly not met in many if not most instances. As discussed above, the issue is that professional development is typically provided for a group of teachers and as such it is very difficult if not impossible to work with each individual teacher in his or her context. It is not "learning" the concepts as abstractions or even applying the concepts to a common case that is the primary problem. What is at issue is supporting the teacher in applying the concepts to his or her particular context. It is the situated interpretation of the

concepts that is central to developing a rich understanding. There are four design principles that support the relevance of LTTS professional development for the teachers.

Ease of Access. Too often ease of access refers to the computer interface and bandwidth requirements of online systems. However, the bulk of accessibility issues rest with the commitment the teacher must make to the professional development schedule and time requirements. Ideally, professional development would provide teachers with just-in-time support for understanding new concepts and strategies and applying them in their classroom. Professional development should be available as a teacher needs it and has time for it. There are four principles supporting the design of LTTS to support ease of access.

Pedagogically sound. The LTTS courses are inquiry environments, designed to provide a scaffolded work environment supporting teachers as they attempt to apply both content and pedagogical concepts in the design of their course. This architecture is based on four design principles.

Cost efficiency. While the use of web based access greatly reduces the cost for the teacher, there are still considerable costs involved in developing, maintaining, and delivering courses. The cost factors are typically not discussed in research papers since managing costs is not the intellectually exciting part of the process. Nonetheless, the inability to sustain costs or scale a program when grant money disappears is a major reason some very excellent professional development initiatives have ended. Thus, we argue, the costs issues involved in any educational design should be part of the design conversation. We identify two design principles to address two of the major cost factors in professional development: the cost of mentoring or teaching and the cost of materials development.

Evaluation of LTTS

Over 600 teachers have enrolled in LTTS and the overwhelming feedback is that they learn a lot, they apply what they learn to the classroom, and the approach we use meets their needs. We have compiled data from the 90 teachers enrolling in LTTS during a three month period in 2003 – the data from all teachers in this period are included. The following tables provide the responses of these teachers to a series of questions.

Percent of students who agree or strongly agree.

The ability to move at my own pace was important to me	94%
I would prefer going through this course with other students as a class	27%
The facilitator was a big help to me.	92%

Self pacing was very important to the teachers, though about a quarter would still like to be in a class with other teachers. It is unclear if they would choose a class if it meant they were not able to move at their own pace (they would have to move with the class). And of course the mentor was seen as very helpful.

Percent of students who agree or strongly agree

I expect to use or have already used the projects developed in this course in my classroom	90%
I can apply what I learned in this course to other activities in my classroom	92%
I learned a lot in this course.	89%

We also asked a series of open ended questions. In the following, we summarize the primary responses to the questions. All percentages are based on the full sample of

What was most helpful to your learning?

Facilitation	40%
Relevance/usefulness of the learning	30%
Structure of the course	11%

What did you like least about the course?

Explicitly stating there were no dislikes	16%
Lack of interaction with other students	10%
Too much effort for 1 credit	10%

Note that there was basically no aspect of the course that received negative comments from students and almost a quarter of the students told us there was nothing they disliked.

What did you learn in this course?

How to integrate what I learned in my classroom	34%
Specific teaching/learning strategies	19%
Specific resources to use in teaching	11%
Inquiry learning	7%

What is your reason for taking an LTTS course rather than a course elsewhere?

Self-paced/flexibility.online	27%
Relevance/usefulness	21%
Supported by a school initiative	18%%

Finally, we provide samples of some of the open ended response students made.

How satisfied are you with your electronic field trip project? Please explain

Very! I have enjoyed the process of developing this activity and I think it is going to be successful enough to use again even if I have to make some modifications. Although technically it's something I could have done on my own, the feedback I received and the guidelines for the final project really pushed me to more clearly articulate what I was trying to accomplish and how I was planning on evaluating the success of the lesson. That is something I don't think I could have done alone

How satisfied are you with your understanding of creating lessons using the Internet as a resource? Please explain.

One of the reasons I took this course is so that I would feel less intimidated by the technology. It's funny now that I'm inclined to say that the Internet part of the course was the least important of what I learned, like that part is no big deal. I think what happened is that this course helped me integrate good teaching practice with the technology so that now I know better how to merge the two. I would say I am definitely more likely to utilize the Internet as a resource now and feel even kind of silly for being afraid!

Open response from a student.

This class has made me open my eyes to not only technology, but also teaching using inquiry learning. As I've progressed through the construction of these lessons, I've found myself "backing off" and trying to become more of a guide to my student's education than a director trying to get the students perform the way I felt they should. I find that by modeling and then letting my students discover their own ideas, they are in control of their learning and it is more authentic to them and their educational needs. The differences I've seen in my students in just the past 4 weeks are astounding. They are taking chances and are not afraid to try new things.