Reflection on My Teaching

Youngjin Lee

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I have taught undergraduate and graduate courses in face-to-face, blended and online formats at the University of Kansas (KU) and UNT. I have developed six learning technology courses when I was at KU. I was consistently rated by students as a knowledgeable, well-organized, and effective teacher, which led to receiving the Bob Frederick Faculty Award, an outstanding faculty award honoring the faculty's devotion to student learning.

Also, I have developed the first learning analytics course in the department and the college, focusing on exploratory data analysis using R, when I joined UNT in Summer 2019. I have received numerous emails from students about the usefulness of the course and the effectiveness of my instructional approach. Also, I will develop the second learning analytics course for the new artificial intelligence (AI) track in the master's degree program in Summer/Fall 2020.

In addition to teaching, I have chaired, mentored or served as a committee member for 33 PhD graduates at KU and UNT. Currently, I am chairing, mentoring or serving as a committee member for additional 7 PhD students at UNT.

Below I will discuss my teaching philosophy, teaching activities, student evaluations, and peer evaluation of my class. I will also include evidence such as syllabi, evaluations and other related documentations in this package.

Teaching Philosophy

I consider teaching as an *experiment* in which I develop an intervention (i.e., teaching practice) based on learning theories and instructional design principles, conduct an experiment to evaluate the effectiveness of the intervention (i.e., student learning), and adjust the parameters of a follow-up experiment in light of the outcome of the current experiment.

When I design a course, I employ a *backward design* approach, which focuses on assessment before instructional activities. In the backward design approach, therefore, teachers need to set the vision or essential understanding of their curriculums or units, decide how students will provide an evidence of their learning, and then finally design instructional activities that can help students learn what is needed to be successful. For example, when I was developing a new course on learning analytics (LTEC 6514), I first came up with small-scale

learning analytics tasks that will allow me to assess the level of understanding of target learning analytics concepts and techniques.

When I teach, I employ *cognitive apprenticeship* as my primary teaching method. Cognitive apprenticeship is a teaching method primarily aimed at teaching the *processes* that an expert would use in solving complex problems. In each session of LTEC 6514, students learn important concepts and skills required to perform various learning analytics task, such as exploratory data analysis and visualization. Since these concepts and skills can be difficult (because it involves R programming), I carefully designed learning activities in such a way that students can see how each concept and skill can be used in different situations or cases, and get a chance to apply what they had learned to new problems and tasks. While demonstrating how learning analytics concepts and techniques can be used in solving real-world problems, I talk aloud in order to help students see how I make critical decisions along the way. In addition, I purposefully make common mistakes, ask students to think about what went wrong, and provide an answer to confirm their understanding or correct their misunderstanding. I found that the *purposeful mistakes and follow-up explanation* approach very effective in helping students avoid committing the same mistakes and consolidating their understanding. Observing students' performance on evaluation tasks allows me to recognize the common mistakes students frequently make and the misunderstandings they may have. Using this information, I update the course contents (e.g., lecture slides, purposeful mistakes, and learning tasks, etc.) accordingly. I hope this iterative approach can help make my course more useful and effective when it is offered in the future semesters.

Teaching Activities & Evaluations

While teaching at KU and UNT, I have consistently received positive feedback from students. The following table[1] displays my official teaching evaluation data.

Semester	Course	Enrolled	Response	Median	CEI
FA 2019	LTEC 6514 001	6	2	2.9/5	6.8/7
	LTEC 6514 040	8	6	4.3/5	6.6/7
SU 2019	ELPS 998	5	3	4.73/5	
SP 2019	ELPS 811	10	8	4.38/5	
	ELPS 896	1	1	5.00/5	
FA 2018	ELPS 712	10	10	4.56/5	
SP 2018	ELPS 811	6	6	5.00/5	
FA 2017	ELPS 712	12	12	4.86/5	
	ELPS 998	8	8	4.93/5	
SU 2017	ELPS 811	13	10	4.18/5	

[1] CEI vales are not available for the courses taught at KU.

Semester	Course	Enrolled	Response	Median	CEI
SP 2017	ELPS 301	23	6	4.61/5	
	ELPS 811	15	13	4.75/5	
FA 2016	ELPS 301	22	18	3.67/5	
	ELPS 712	10	10	4.74/5	
SU 2016	ELPS 811	24	14	4.39/5	
SP 2016	ELPS 301	21	21	4.56/5	
	ELPS 811	26	15	4.18/5	
FA 2015	ELPS 301	25	24	4.42/5	
	ELPS 810 23871	15	10	4.40/5	
	ELPS 810 33080	10	5	3.60/5	
FA 2014	ELPS 301	22	21	4.78/5	
	ELPS 810	20	19	4.81/5	
SU 2014	ELPS 810	13	13	4.54/5	
SP 2014	ELPS 301	22	21	4.58/5	
	ELPS 810	10	9	4.91/5	

Feedback from Students

Email from Students

Students found that I am very knowledgeable, well-organized, resourceful and effective. The following is the email messages from students who took LTEC 6514, the new learning analytics course I developed for advanced doctoral students, in Summer 2019.

From: "Larson, Kristi" <KristiLarson@my.unt.edu>
Subject: Feedback on tonight's class
Date: November 20, 2019 at 8:18:38 PM CST
To: "Lee, Youngjin" <Youngjin.Lee@unt.edu>

Hi Dr. Lee,

I felt compelled to reach out to you after tonight's class and let you know it was EXCELLENT!!! You did a wonderful job of breaking down everything step by step and presenting it in a very detailed and informative way. I have had the benefit of catching on with R from the start, but not everyone has and I feel like the way you went through it tonight was most definitely beneficial for those students, as well as for myself as it helped to deepen my knowledge. Kudos on a great job tonight!

Kristi Larson

From: Monica Thapa <notifications@instructure.com>
Subject: Final Project, LTEC 6514 Section 001 - Seminar on Advanced Research Topics in Learning Technologies and Information Sciences (Fall 2019 1)
Date: December 4, 2019 at 8:13:44 PM CST
To: Youngjin.Lee@unt.edu

Dr. Lee,
Thank you for all your teaching techniques. I learned a lot about R in this course specially doing this project. I was able to create these R codes by myself. Let me know if you have any question.

Thank you.

Monica Thapa

From: "Scott, Jennifer" <JenniferScott3@my.unt.edu>
Subject: Re: [LTEC 6514] Provide your opinion
Date: November 7, 2019 at 4:46:38 PM CST
To: "Lee, Youngjin" <Youngjin.Lee@unt.edu>

Hi Dr. Lee:

Thank you so much for inviting feedback. First, I want to say I am very much enjoying the class thus far and am grateful it is part of the curriculum. Just FYI, it does feel as if I am learning a foreign language - i.e. French 101.

Anonymous Feedback in Course Summary Report

Several students provided very positive feedback when they were responding to the course evaluation at the end of the semester. The following is a few examples from LTEC 6514 I taught in Fall 2019.

- This was probably the most intellectually stimulating so far (and sometimes I thought so hard it made my head hurt). It was a brand new application and forced me to think about analytics from a truly core foundational level. The application in the final project was excellent.
- Yes, a very interesting, relevant and brand-new competency.
- The course was very stimulating. Programming in R was a brand new experience.
- Dr. Lee's Powerpoints were elegant in structure.
- Going through practice exercises in class and providing what it SHOULD look like when we run the code for the assigned homework was super helpful.

Peer Evaluation

Dr. Gerald Knezek, who is one of the two Regents Professors in the department, sat on the face-to-face sessions of LTEC 6514 in Fall 2019 to evalute my teaching performance. The following is what he said at the end of the semester.

From: Gerald Knezek <gknezek@gmail.com>
Subject: [EXT] RE: 6514 Learning Analytics Final Presentations
Date: December 4, 2019 at 7:25:51 PM CST
To: "Lee, Youngjin" <Youngjin.Lee@unt.edu>
Cc: Gerald Knezek <gknezek@gmail.com>

Dr. Lee, I am so impressed with the student final presentations for your class! This is amazing where they have come since I saw them the first week or two. You have made several adjustments to meet the level of the students coming to you, and clearly it has worked!

The feedback you give reminds me of our former Computer Science Colleague Kathy Swigger (Engineering) who taught expert systems in our early days at UNT using large dept. of defense systems. She had a wonderful, precise style of saying "your work is good; consider fine tuning to make it a little better (maybe in the future) by changing/adding/saying this." You have that very useful instructional talent, also.

It is clear from listening and seeing that your students are well prepared and know what they are presenting. This is wonderful to see every student present their own analysis and findings of their own research questions, either based their own data or a data set you have helped them engage with. I note that several said they felt they found interesting trends and would wish to analyze their data further.

As your assigned mentor, I invite you to include any of this in your portfolio for annual reviews, meeting with Dept. Chair, etc.

Regards, G. Knezek

From: Gerald Knezek <gknezek@gmail.com>
Subject: Re: [EXT] 6514 Learning Analytics Final Presentations
Date: December 4, 2019 at 11:11:56 PM CST
To: "Lee, Youngjin" <Youngjin.Lee@unt.edu>

Youngjin, Congratulations!

You have made it through the first semester and successfully promoted student learning and enthusiasm, presenting day 1 what we primarily brought you here to teach! This is a difficult challenge but you are now 3 years ahead, in synch with our curriculum and style, compared to where a beginning Asst. Prof. would have begun with easy tool courses. I think we will see half of your students use some exploratory data visualization tool they learned in your course, in their doctoral dissertations. This is the number you/we should keep an eye on recording.

if evaluations turn out to not be so high because they "said that it is the most difficult course.." and your ability as an instructor is questioned because of that, then please invite me to speak/rebutt with a story about the first year Dr. Warren and Dr. Jones were teaching the PhD core, and how many very low grades they gave and how the Dept. stood behind them (within reason) while they adjusted. You have already made many adjustments to accommodate the varied entry levels of our students. I am sure that by the time you teach this course for the 3rd time with our students (that is the number of times it takes me to get a new course right) you and they will both be comfortable and all will be fine.

Please consider what it would require to move all our quantitative analyses to R. My major concern is what to do about those who are not computer scientists or currently research analysts. Maybe we need to add a course or two to the qualitative track. This will be an ongoing dialog.

I am glad you are here!

Regards, Gerald