A NEEDS ASSESSMENT OF ONLINE MASTER'S CORE COURSES IN IST

TEAM THINK TANK | FALL 2016, R621 INDIANA UNIVERSITY

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EXECUTIVE SUMMARY

The purpose of this needs analysis project was to assess the needs of IST faculty who have taught and students who have taken online master's core courses using needs assessment process. Identifying real needs helps increase online master's students' learning and satisfaction. This report summarizes the data collection and analysis process and the results of needs analysis using PEST, SWOT, and Force Field Analysis methods. As a result, the Think Tank consulting team had the following results:

Positives Findings

- Online courses are flexible
- Strong program with excellent faculty
- Well-designed and structured courses
- Diversity of online students
- Teaching both online and face-to-face courses is beneficial for online students

Areas for Improvement

- New students did not feel that they received adequate support for studying and other procedures related to the program
- Team work is difficult
- Lack of interaction with instructors
- Canvas discussion forum is difficult to trace discussion
- Some irrelevant course content

Recommendations

Based on the findings and migration strategy, the following recommendations are made:

- Leverage what's going well and build on it
- Optimize orientation experience
- Build online teaching community
- Improve course delivery tool

ACKNOWLEDGEMENTS

The Think Tank Consulting team would like to thank the following individuals for their assistance that has made this project possible:

- Thomas A. Brush, Professor and Chair of IST, Indiana University and key stakeholder, for allowing us to work on this needs initiative and for all the support and resources provided
- Elizabeth Boling, Professor and Associate Dean for Graduate Studies, for providing suggestions and resources to the project
- Dr. Bonk, Dr. Leftwich, Dr. Kwon, Dr. Ozogul and Dr. Cho for accepting our interview and providing great thoughts
- Online students who participated in our survey or interview
- Dr. Cho for her suggestions and support throughout the project

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1. INTRODUCTION

1.1 A needs analysis was conducted for Instructional System Technology to assess the needs of IST faculty who have taught and students who have taken online master's core courses using the needs assessment process. This report summarizes the research methodology, analysis, findings and recommendations.

2. AIM AND SCOPE

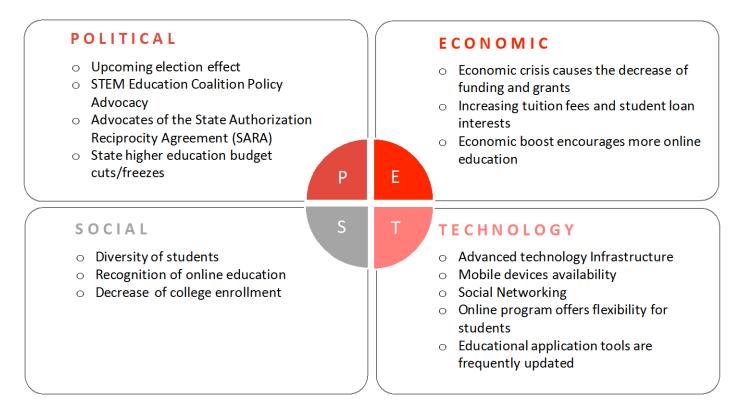
2.1 The purpose of this needs analysis project was to assess the needs to help increase online master's students' learning and satisfaction. Based on the findings and recommendations of the needs analysis project, we can revise our online courses to increase online master's students' learning and satisfaction.

3. BACKGROUND

- 3.1 Online learning is widely adopted in higher education because of its flexibility. IST's online master's program is one of the earliest and strongest online programs in the U.S. because of its excellent leadership, faculty members, and well-designed curriculum. There are 39 current online master's students who are working as professionals.
- 3.2 To make the program continue being a leading program in U.S., there is a need to reexamine the current state of the program to improve online courses and increase students' learning and satisfaction.

4. PEST ANALYSIS

4.1 A PEST analysis was conducted to evaluate external factors, which includes the political, economic, social, and technological aspects, related to the online IST master's courses.



5. FRAME FACTORS

5.1 The frame factors are the limitations that influence the needs analysis project. The following three areas are identified as frame factors that influenced this project:

- Time limitation for collecting and analyzing the data (less than four months)
- Faculty availability
- Bias towards project due to members of team also being IST students

6. PROJECT METHODOLOGY

6.1 This needs analysis project took ten weeks to complete. Qualitative and quantitative data were collected to triangulate the findings. Below is the process of this project (see Figure 1).

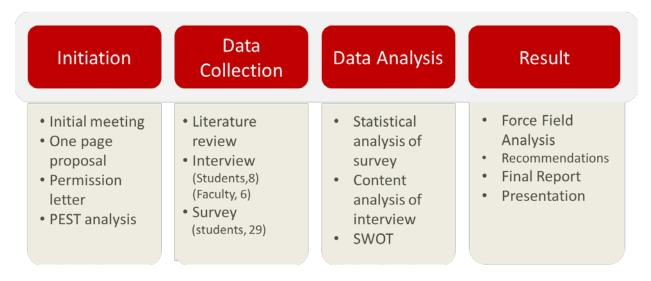


Figure 1. Project Methodology

6.2 Initiation

The team initially met with the client, Dr. Brush, to review the aim and scope of the needs analysis project and identify frame factors. The team reviewed details of the proposal with the client for approval (see Appendix A). A permission letter was signed by the client (see Appendix B). Then the proposal was finalized and a PEST analysis was conducted.

6.3 Data Collection

Three data collection methods were used: literature review, interviews, and surveys.

- A literature review was conducted to see an overview of online teaching and learning
- Interviews with the stakeholders, including Associate Dean for Graduate Studies, online instructors, and current online IST students (Appendix C)
- An online survey sent to current IST online students (see Appendix D)

6.4 Data Analysis

Findings were concluded by analyzing qualitative and quantitative data. We analyzed Likert-scale survey data, open-ended survey questions and interview data. Based on the findings a SWOT analysis was conducted. A migration strategy using force field analysis was conducted to identify the driving forces and their effect on the program.

6.5 Results

Based on findings and migration strategy, the consulting team reported and presented findings and recommendations.

7. DATA ANALYSIS (SWOT)

7.1 SWOT analysis was conducted to identify the internal strengths and weaknesses as well as external opportunities and threats

INTERNAL

STRENGTH

- o Expertise of online professors
- Strong online and project-based courses design
- A variety of student education and working backgrounds
- Availability of free software on IUware and IUanyWare
- Accessibility of professors

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WEAKNESS

- o Lack of social interactions among online learners
- Little to no involvement of residential students' interaction with online students
- o Lack of financial support for online learners
- Lack of basic standard expectation for online instructors
- Different communication tools used in different online courses

OPPORTUNITY

- Increasing demands of Instructional designers for IST program graduates
- o Increasing global demands for online education
- o Emerging communication and collaboration tools
- o Partnerships with internal/external organizations
- International recognition for the master's program

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W

THREAT

- Rapidly changing technology trends
- Increased competition from other universities
- Increased competition from Massive Open Online Courses (MOOCs)

EXTERNAL

8. FINDINGS

Data collection and triangulation of information from interviews and surveys have yielded a list of findings. Findings have been categorized into positives and areas for improvement.

Positives

- 1. Online courses are flexible (Finding 1)
 - Students can access courses at anytime and anywhere
 - Students have flexibility to choose assignments related to their work areas
- 2. Strong program with excellent faculty members (Finding 2)
 - Courses are designed by experts in IST based on many years experiences
 - Instructors are also researchers and know the science of teaching
 - Many instructors are supportive and committed
 - IU Bloomington IST has a good reputation
- 3. Well-designed and structured courses (Finding 3)
 - The learning objectives and assignments are clear
 - The content of many courses is great, such as well-structured, updated, comprehensively catching the core concepts
 - Project-based courses are delivered, which are practical, authentic and related to students' current professions
 - Students like recorded video of instructors or screencast
- 4. Diversity of online students (Finding 4)
 - Students can get different perspectives from classmates all over the world
 - Students are practitioners from different work areas such as corporate or higher education
- 5. Teaching both online and face-to-face courses is beneficial for online students (Finding 5)
 - Recorded face-to-face class increases teacher presence and engagement of online students
 - Share questions and practical field experiences between online and face-to-face students

Areas for Improvement

- 6. New students did not feel that they received adequate support for studying and other procedures related to program (**Finding 6**)
 - Lack of online orientation
 - Have difficulty figuring out what they should do at the beginning of the first semester
 - Could not get enough guidance from advisor
 - Do not have a faculty meeting to specifically talk about online teaching standard expectations
 - Do not have training on online teaching for faculty
- 7. Team work is difficult (Finding 7)
 - Different time zones
 - Different perspectives
 - Not enough guidance for teamwork
 - Some tools are not suitable for teamwork (such as Dreamweaver)
- 8. Lack of interaction with instructors (Finding 8)
 - Cannot get immediate feedback from some instructors through email
 - Lack of interaction through phone calls
 - Lack of office hours to interact with instructors one-to-one online
- 9. Canvas discussion forum/ course structure is not easy to use (Finding 9)
 - It is linear and not intelligent
 - Difficult to trace discussion threads
 - Different course structures of the foundation courses in Canvas make students confused
- 10. Some irrelevant course content (Finding 10)
 - Outdated technology and course materials in R541. Dreamweaver is outdated
 - The content focuses more on academic path than corporate, so some students from a corporate background feel that some content is less relevant

9. MIGRATION STRATEGY

9.1 A Migration Strategy is a method used to develop a plan for moving the current state to the optimal state using force-field analysis. The positive findings were translated into actionable Driving Forces, and negative findings into Restraining Forces.

Driving and Restraining Forces		Current State								After 6 Months								After 1 Year												
	-5	-4	-3	-2	-1	1	2	3	4	5	-5	-4	-3	-2	-1	1	2	3	4	5	-5	-4	-3	-2	-1	1	2	3	4	5
D1: Stong program with excellent faculty																														
D2: Flexiblibility of online courses																														
D3: Well-designed and structured courses																														
D4: Diveristy of online master's students																														
D5: Getting resources from face-to-face classroom/students																														
R1: Lack of guidance or support																														
R2: Canvas discussion forum is not easy to track																														
R3: Lack of interaction with instructors																														
R4: Diffculty in team collaboration																														
R5: Some irrelevant course content																														
Total			-19					15					-15					16					-12					19		

9.2 Migration Strategy Overview

The analysis provides strategies for changing in a one-year timeline (the current state, 6-month and 12-month interval).

- **9.3 Current State:** In the current state the restraining forces are greater than the driving forces. This is primarily because of current lack of guidance and support, interaction with instructors, Canvas and teamwork problems.
- **9.4 Strategy after 6 months:** The driving forces will begin to balance the restraining forces and improvements will occur for long term success after 6 months.
 - During the initial change period most of the driving forces will remain consistent, and there is a slight increase in D5
 - Restraining forces are expected to begin decrease. Expected changes in R1, R3, R4 and R5 will contribute to the overall lowering of restraining forces
- **9.5 Strategy after 12 months:** After one year the driving forces will outweigh the restraining forces.
 - D2, D3 and D4 will slightly increase
 - Slightly decrease in R1, R2 and R5 will occur

10. RECOMMENDATIONS

Based on the findings and migration strategies, the following recommendations are made:

Recommendation 1: Leverage what's going well and build on it (Findings 1, 2, 3, 5 and 10)

- Continue to leverage the excellent faculty resources and provide high quality online courses
- Apply IST faculties' research findings into online classroom teaching
- Continue to provide flexible timeline, course resources and assignments options
- Keep the foundation of the well-designed courses, update related technology and balance the proportion of corporation and education topics
- Get to know online students' work backgrounds and make online course content relating to students' work
- Continue to leverage face-to-face classroom resources for online courses

Critical Success Factors:

 Buy-in from faculty to have the shared visions such as maintaining the course quality and providing course flexibility to students

Recommendation 2: Optimize orientation experience (Finding 6)

- Keep face-to-face orientation tradition and pay attention to the different needs between online students' and residential students
- Create online orientation specifically for online students
- Provide detail information on registration, adding and dropping courses, the way to use Canvas and the procedure of the program through videos, pdfs and webpages

Critical Success Factors:

 Buy-in from an administrative level to launch online orientation containing rich but concise information

Recommendation 3: Build online teaching community (Findings 6, 7 and 8)

- Make standard expectations for online instructors, such as the frequency of regular online teaching meetings, checking the discussion board, making announcements, the response time to questions and virtual office hour time
- Communicate online teaching experiences, such as how to guide students' team collaboration

Critical Success Factors:

 Buy-in from the faculty members to have bi-weekly/monthly meetings to discuss online teaching

Recommendation 4: *Improve course delivery tool* (Findings 6 and 9)

 Improve Canvas discussion forum to make it easy to trace discussion by providing suggestions to ETS or UITS

Critical Success Factors:

 Buy-in from ETS or UITS to change some of the functions or interactions on Canvas

Appendix A: One Page Proposal

A NEEDS ASSESSMENT OF ONLINE MASTER'S CORE COURSES IN IST

PURPOSE

The purpose of this needs analysis project is to assess the needs of IST faculty who have taught and students who have taken online master's core courses using needs assessment process. Identifying real needs will help increase online master's students' learning and satisfaction.

BACKGROUND

Online learning is widely adopted in higher education because of its flexibility. IST's online master's program is one of the earliest and strongest online programs in the U.S. because of its excellent leadership, faculty members, and well-designed curriculum. To make the program more attractive to students, there is a need to reexamine the current state of the program periodically and make recommendations to this program.

KEY STAKEHOLDERS

The key stakeholders for this project include the Chair of IST, the Associate Dean of Graduate Studies, online master's students, and instructors.

FRAME FACTORS

This project's frame factors include time limitation for collecting and analyzing the data, faculty availability, and eliminating the bias and language barriers of team members who are international students.

DATA COLLECTION & ANALYSIS

A literature review of online teaching and learning will be conducted to get a big picture of online education. Our primary data will be semi-structured interviews with the Chair of IST, the Associate Dean of Graduate Studies, 10 online students and 6 instructors, and surveys with 39 online master's students of IST. Our secondary data will be the review of archival data. We will use PEST, SWOT, and Force Field analysis methods as part of our data analysis.

PROJECT PLAN

Task	Due Date	Key persons			
Initial client face to face meeting	Sep. 15	Meina (Client: Brush)			
Project proposal	Sep. 19	Meina			
Permission letter	Sep. 26	Ling			
Data collection					
 Literature review 	Sep. 30	Ling			
 Document review 	Sep. 27-Oct. 10	Ling			
 Interviews – semi-structured 	Oct. 1-Oct. 21	Inging			
 Surveys – question development, pilot, 	Oct. 1-Oct. 21	Meina			
electronically distributed (all)					
Data analysis					
Content analysis of document review and literature review	Oct. 11-Oct. 21	Ling			
Content analysis of interview data	Oct. 22-Nov. 8	Inging			
Statistics analysis of survey data	Oct. 22-Nov. 8	Meina			
Submit progress report	Oct. 31	Inging			
Submit draft report (pilot presentation)	Nov. 14	Ling			
Solicit client's final feedback	The week of Nov. 14	Inging			
Submit final report to Dr. Cho and client	Nov. 28	Meina			
Final presentation to client	Nov. 28	Clients: Brush and Boling			

Appendix B: Permission Letter



Department of Instructional Systems Technology Bloomington

September 26, 2016

Ratrapee Techawitthayachinda, Meina Zhu and Ling Qian, Department of Instructional Systems Technology W. W. Wright Education Building, Room 2276 201 N. Rose Avenue Bloomington, IN 47405-1006

Dear Ratrapee, Meina and Ling:

In my role as Chair of the Instructional Systems Technology (IST) department, I am writing to grant you permission to conduct a needs analysis of the IST online master's program at Indiana University Bloomington. In return, I am requesting a copy of your final report. Please submit this to me as an electronic document by 9 a.m. EST on November 28, 2016.

I look forward to working with you on this initiative.

Momas a Bent

Sincerely,

Thomas A. Brush, Ph.D.

Barbara B. Jacobs Chair in Education and Technology, Indiana University

Professor & Chair of IST, Indiana University

Phone: (812) 856-8458 Fax: (812) 856-8239

Appendix C: Interview Protocol

Interview Protocol for Leaders

The purpose of this research is to assess the needs of IST faculty who have taught and students who have taken online master's core courses using the needs assessment process. Identifying their real needs will help increase students' learning and satisfaction on online master's core courses.

For this interview, please read the following instruction:

- 1. The interview will be audio recorded.
- 2. Efforts will be made to keep the information you provide to us confidential.
- 3. The duration of the interview will be less than 30 minutes. Member-checking email might be sent to you for clarification about the interview.
- 4. The participation is voluntary. Feel free to stop the interview if you are uncomfortable with any question.

Interview Questions

- 1. Our stakeholders include Tom the chair, Professor Boling, online instructors, and students. Instructors include Dr. Bonk, Dr. Cho, Dr. Glazewski, Dr. Kwon, Dr. Leftwich, Dr. Ozogul. Thirtynine students are enrolled in core courses. We will conduct interviews with Professor Boling and instructors listed above and 10 students. We will also conduct a survey with 39 online students. Is there anything to consider in our data collection process?
- 2. We will review archival data which are available in IST. Please let us know what kind of data will be available except the website? How can we access the data?
- 3. As an IST leader, what do you think of our current online master's core courses? Please tell us strengths and areas for improvement.
- 4. If there are any other suggestions you want to make, please feel free to do so.
- 5. As you are a key stakeholder in our project, we will ask for meetings whenever needed. How shall we make an appointment?

Interview Protocol for Instructors

The purpose of this research is to identify the needs of IST faculty who have taught and students who have taken online master's core courses using needs assessment process. Identifying real needs will help increase online master's students' learning satisfaction.

Efforts will be made to keep the information you provide to us confidential.

Interview Questions

Please introduce yourself briefly.

- 1. Can you please tell us your experience in teaching online courses and face-to-face courses?
- 2. What are the delivery methods you are using in your online classes? Why?
- 3. How are you addressing the needs of students with different education and working background?
- 4. How are you engaging online students in your online classes?
- 5. What do you think are the strengths and places for improvement of IST's master's online courses?
- 6. What would you suggest to improve online master's core courses to promote students' learning and satisfaction?

Thank you for participation!

Interview Protocol for IST Online Master's Students

The purpose of this research is to assess the needs of IST faculty who have taught and students who have taken online master's core courses using needs assessment process. Assessing real needs will help increase online master's students' learning satisfaction.

For this interview, please read the following instruction:

- 5. The interview will be audio recorded.
- 6. Efforts will be made to keep the information you provide to us confidential and your instructors will not know that you have participated.
- 7. The duration of the interview will be less than 20 minutes. Member-checking email might be sent to you for clarification about the interview.
- 8. The participation is voluntary. Feel free to stop the interview if you are uncomfortable with any question.

Interview Questions

- 1. Please introduce yourself briefly.
- 2. Please tell us your experience in taking online courses.
- 3. What do think are the advantages of online courses?
- 4. What do think are the disadvantages of online courses?
- 5. Can you please give us an example of online classes that you enjoyed? Why?
- 6. What would you suggest to improve online classes in IST?



-
Introduction
Hello.
The purpose of our study led by Dr. Yonjoo Cho is to identify the real needs of IST online master's students and make recommendations to improve IST online master's core courses
You are invited to participate in a survey regarding your perception of IST online master's core courses because you are a current IST online master student. Information you provide will be confidential. It will take approximately 10 minutes to finish the survey. There is no back-button. You cannot go back to make changes to your earlier answers. It's important to be careful when you answer each question.
Please contact Meina Zhu (meinzhu@indiana.edu) if you have any questions about this survey.
Demography
Q1. Choose one from below about gender.
Female
Male
Don't want to answer
Q2. What year of graduate school are you currently enrolled in?
1st Year
2nd Year
3rd Year
More than 3 years

Q3. Which courses have you taken so far? (Select all that apply)

R511: Instructional Technology Foundations

R521: Design and Development of Instructional and Performance Interventions

R541: Instructional Development and Production: Design Thinking

R561: Evaluation of Instructional and Performance Improvement Systems

R621: Analysis for Instructional & Performance Improvement

Q4. For **R511: Instructional Technology Foundations**, please rate your agreement/disagreement with the statements that describe your perception on this course.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not applicable
Learning objectives are clear.	0	0	0	0	0	0
Navigation of the online course is clear.	0	0	0	0	0	0
Course materials include different media formats to facilitate students' learning.	0	0	0	0	0	0
Assessment methods are appropriate to measure what I have learned.	0	0	0	0	0	0
Grading policies are clearly presented.	0	0	0	0	0	0
The course encourages student to interact with each other.	0	0	0	0	0	0
The course is relevant to my work.	0	0	0	0	0	0
The instructor delivers learning content clearly.	0	0	0	0	0	0
The instructor provides students with constructive feedback on assignments.	0	0	0	0	0	0
The instructor provides feedback promptly.	0	0	0	0	0	0

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not applicable
I would recommend this course to other students.	0	0	0	0	0	0

Q5. For R521: Design and Development of Instructional and Performance

Interventions, please rate your agreement/disagreement with the statements that describe your perception on this course.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not applicable
Learning objectives are clear.	0	0	0	0	0	0
Navigation of the online course is clear.	0	0	0	0	0	0
Course materials include different media formats to facilitate students' learning.	0	0	0	0	0	0
Assessment methods are appropriate to measure what I have learned.	0	0	0	0	0	0
Grading policies are clearly presented.	0	0	0	0	0	0
The course encourages student to interact with each other.	0	0	0	0	0	0
The course is relevant to my work.	0	0	0	0	0	0
The instructor delivers learning content clearly.	0	0	0	0	0	0
The nstructor provides students with constructive feedback on assignments.	0	0	0	0	0	0
The instructor provides feedback promptly.	0	0	0	0	0	0
I would recommend this course to other students.	0	0	0	0	0	0

Q6. For **541:** Instructional Development and Production Process I, please rate your agreement/disagreement with the statements that describe your perception on this course.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not applicable
Learning objectives are clear.	0	0	0	0	0	0
Navigation of the online course is clear.	0	0	0	0	0	0
Course materials include different media formats to facilitate students' learning.	0	0	0	0	0	0
Assessment methods are appropriate to measure what I have learned.	0	0	0	0	0	0
Grading policies are clearly presented.	0	0	0	0	0	0
The course encourages student to interact with each other.	0	0	0	0	0	0
The course is relevant to my work.	0	0	0	0	0	0
The instructor delivers learning content clearly.	0	0	0	0	0	0
The instructor provides students with constructive feedback on assignments.	Ο	0	0	0	0	0
The instructor provides feedback promptly.	0	0	0	0	0	0
I would recommend this course to other students.	0	0	0	0	0	0

Q7. For R561: Evaluation of Instructional and Performance Improvement

Systems, please rate your agreement/disagreement with the statements that describe your perception on this course.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Available
Learning objectives are clear.	0	0	0	0	0	0

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Available
Navigation of the online course is clear.	0	0	0	0	0	0
Course materials include different media formats to facilitate students' learning.	0	0	0	0	0	0
Assessment methods are appropriate to measure what I have learned.	0	0	0	0	0	0
Grading policies are clearly presented.	0	0	0	0	0	0
The course encourages student to interact with each other.	0	0	0	0	0	0
The course is relevant to my work.	0	0	0	0	0	0
The instructor delivers learning content clearly.	0	0	0	0	0	0
The instructor provides students with constructive feedback on assignments.	Ο	0	0	0	0	0
The instructor provides feedback promptly.	0	0	0	0	0	0
I would recommend this course to other students.	0	0	0	0	0	0

Q8. For **R621: Analysis for Instructional & Performance Improvement**, please rate your agreement/disagreement with the statements that describe your perception on this course.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Available
Learning objectives are clear.	0	0	0	0	0	0
Navigation of the online course is clear.	0	0	0	0	0	0
Course materials include different media formats to facilitate students' learning.	0	0	0	0	0	0

	agree	Agree	Neutral	Disagree	disagree	Available
Assessment methods are appropriate to measure what I have learned.	0	0	0	0	0	0
Grading policies are clearly presented.	0	0	0	0	0	0
The course encourages student to interact with each other.	0	0	0	0	0	0
The course is relevant to my work.	0	0	0	0	0	0
The instructor delivers learning content clearly.	0	0	0	0	0	0
The instructor provides students with constructive feedback on assignments.	0	0	0	0	0	0
The instructor provides feedback promptly.	0	0	0	0	0	0
I would recommend this course to other students.	0	0	0	0	0	0
Q9. What technologies h	nave been u	sed in thes	e courses?	(Select all	that apply)	
Adobe Connect						
Zoom						
Skype						
Google Hangout						
			If none of th	ne above, plea	ase state wha	at it was.
Q10. Among these tech	nologies, wh	nich one wa	as the most	helpful?		
Adobe Connect						
Zoom						
Skype						
Google Hangout						
			If none of th	ne above, plea	ase state who	at it was.

:
s, please provide your email.
**

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Reference:

- Kern, R., Ware, P., & Warschauer, M. (2004). 11. Crossing frontiers: new directions in online pedagogy and research. *Annual review of applied linguistics*, 24, 243-260.
- Stephenson, J. (2001). *Teaching & Learning Online: Pedagogies for New Technologies*. Stylus Publishing, Inc., 22883 Quicksilver Dr., Sterling, VA 20166-2012.
- Salmon, G. (2004). E-moderating: The key to teaching and learning online. Psychology Press.
- Anderson, T. (2008). The theory and practice of online learning. Athabasca University Press.
- Garrison, D. R., & Cleveland-Innes, M. (2005). Facilitating cognitive presence in online learning: Interaction is not enough. *The American Journal of Distance Education*, 19(3), 133-148.
- Puzziferro, M., & Shelton, K. (2014). A model for developing high-quality online courses: Integrating a systems approach with learning theory.
- Lewis, C. C., & Abdul-Hamid, H. (2006). Implementing effective online teaching practices: Voices of exemplary faculty. *Innovative Higher Education*, *31*(2), 83-98.
- Young, S. (2006). Student views of effective online teaching in higher education. *The American Journal of Distance Education*, 20(2), 65-77.
- Means, B., Toyama, Y., Murphy, R. O. B. E. R. T., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. *Teachers College Record*, *115*(3), 1-47.
- Venkatesh, V., Croteau, A. M., & Rabah, J. (2014, January). Perceptions of effectiveness of instructional uses of technology in higher education in an era of Web 2.0. In *2014 47th Hawaii International Conference on System Sciences* (pp. 110-119). IEEE.
- Bangert, A. W. (2006). Identifying factors underlying the quality of online teaching effectiveness: An exploratory study. *Journal of Computing in Higher Education*, *17*(2), 79-99.
- Gamage, D., Fernando, S., & Perera, I. (2015, August). Quality of MOOCs: A review of literature on effectiveness and quality aspects. In *Ubi-Media Computing (UMEDIA), 2015 8th International Conference on* (pp. 224-229). IEEE.
- King, S. B. (2014). Graduate student perceptions of the use of online course tools to support engagement.

 International Journal for the Scholarship of Teaching and Learning, 8(1), 5.
- Picciano, A. G. (2002). Beyond student perceptions: Issues of interaction, presence, and performance in an online course. *Journal of Asynchronous learning networks*, *6*(1), 21-40.