Videoconferencing Teaching Effectiveness with Students at Multiple Locations

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Associate Professor

Kansas State University

Dr. Sara Gragg
Assistant Professor

IS THIS EFFECTIVE???

Thank you! Questions?
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Food Microbiology (FDSCI 600)

- Fall 2014
- Sections
  - Manhattan
    - Undergraduates (n=64)
    - Graduates (n=4)
  - Olathe
    - Graduates (n=1)
- Olathe-based instructor
  - Videoconferencing
  - In-person
IS THIS EFFECTIVE???
Questions used for the first half of the course - survey iterations

1. At what moment in this week’s class session did you feel most engaged with what was happening?
2. At what moment in this week’s class session today did you feel most distanced from what was happening?
3. What action that anyone (instructor or student) took in this week’s session did you find most helpful?
4. What action that anyone (instructor or student) took in this week’s class session did you find most puzzling or confusing?
5. What about the week’s class session surprised you the most? (This could be something about your own reactions to what went on, or something that someone did, or anything else that occurs to you.)
6. During this week’s class session, how did the delivery method affect your ability to learn from the instructors?
7. During this week’s class session, how did the delivery method affect your ability to learn from your classmates?
Research Questions

Modified questions due to student disinterest in completing the surveys for second half of the course.
Rate on a scale from Not at all to Very Well the following items:
1. How well can you see the instructor?
2. How well can you hear the instructor?
3. How comfortable do you feel asking a question during class?
   Not at all
   I do not think the instructor would hear me.
   I have tried and been unsuccessful.
   I would rather email the instructor later.
   I feel comfortable, but haven’t had any questions.
   I feel very free to ask the instructor questions during the class sessions.
   I have texted the instructor a question during the class session.
4. In comparison with a face to face experience (when the instructor is present in the classroom with you), do you find the learning experience with the video-conference delivery the same or extremely different?
5. At what moment in this week’s class session did you feel most engaged with what was happening?
6. What action that anyone (instructor or student) took in this week’s class session did you find most helpful to you learning the course material?
Resulting Themes

- Instructor present (most prevalent theme)
- Technical difficulties
- Student interaction
- Instructor video conferencing
- Writing/drawing on whiteboard
- Student dissatisfaction escalated as course progressed
- Students recommend online lectures
Instructor Present

- Most engaged when instructor or TA are present
  - Learned a lot more
  - Better able to focus
  - Instructor most helpful in person

- Instructor present had better effect on student learning ability

- When present, the instructor is better able to:
  - Interact
  - Ask questions
  - Obtain answers to questions from students
Technical Difficulties

- Distanced by the "online" lecture
- Distanced by technical difficulties
- Delayed voice quality
- Distracting
  - Voice sounded distorted
- Video lectures difficult to understand
- Distance lag and poor voice connection
  - Detrimental to student learning
- Voice quality is terrible
  - Distracting for learning
Student Interaction

- Students very "sassy" and harsh when instructor is not physically in class
- Student's don't:
  - Take class as seriously
  - Speak up to ask/answer questions
    - Microphone rarely detects them
  - Learn from classmates
- Students feel as though they must be silent in class
  - Scary to ask questions
- Students more likely to participate in discussion when instructor is physically present
  - More communication
Instructor Videoconferencing

More difficult for students to:
• Follow lectures and stay engaged
• Understand video lectures
• Focus on the lecture material
  • Attention drifts in and out
Writing/Drawing on Whiteboard

- Students enjoyed seeing the instructor
  - Drawings
  - Written examples
Student Dissatisfaction

- Escalated as the course/semester progressed
- Recurring student comments:
  - I do not like online teaching
  - I HATE online delivery
  - It "sucks" to learn food microbiology over a screen
  - This is truly a bad way to teach food microbiology
Students Recommend Online Lectures

- Move lectures online in lieu of videoconferencing
  - Harder to pay attention with no instructor present

- "I enjoy having a teacher in front of me. If I wanted online classes, I would take them online. When I take online classes, I can review lectures many times. This class feels like a mix of both bad. Little to not teacher interaction."
## Other Data

<table>
<thead>
<tr>
<th>Question</th>
<th>Not at all</th>
<th>Very little</th>
<th>Sometimes</th>
<th>Most of the time</th>
<th>Very well</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How well can you see the instructor?</td>
<td>0%</td>
<td>2%</td>
<td>9%</td>
<td>23%</td>
<td>65%</td>
</tr>
<tr>
<td>2. How well can you hear the instructor?</td>
<td>0%</td>
<td>3%</td>
<td>15%</td>
<td>39%</td>
<td>44%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How comfortable do you feel asking a question during class?</th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>10%  Not at all</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>20%  I do not think the instructor asks instructors questions during class when videoconferencing</td>
<td></td>
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<td>15%  I have tried to ask questions, but I have not succeeded</td>
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</tr>
<tr>
<td>21%  I feel very uncomfortable, but have not asked any questions</td>
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<td></td>
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<tr>
<td>18%  Instructor asks me questions during class</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>16%  I have texted the instructor during class</td>
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<table>
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<th>Do you find the learning experience with videoconference delivery to be the same or extremely different?</th>
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<tr>
<td>46%  Different-difficult</td>
<td></td>
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<td>25%  Same-no effect</td>
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2/3 of students would not interact during class when videoconferencing.
### Other Data

#### Question 1: How well can you see the instructor?
- Not at all: 0%
- Very little: 2%
- Sometimes: 9%
- Most of the time: 23%
- Very well: 65%

#### Question 2: How well can you hear the instructor?
- Not at all: 0%
- Very little: 3%
- Sometimes: 15%
- Most of the time: 39%
- Very well: 44%

#### How comfortable do you feel asking a question during class?

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<td>10%</td>
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<tr>
<td>20%</td>
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<td>15%</td>
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2. How well can you hear the instructor?
   - Not at all: 0%
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   - Most of the time: 39%
   - Very well: 44%

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<td>I would rather email or text the instructor</td>
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<td>I feel comfortable, but have never asked any questions</td>
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2/3 of students would not interact during class when videoconferencing.

Do you find the learning experience with videoconference delivery to be the same or extremely different?

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<td>15%</td>
<td>I have tried but have been unsuccessful in doing so</td>
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<tr>
<td>21%</td>
<td>I would rather engage in instructor led rather than video conferencing sessions</td>
</tr>
<tr>
<td>18%</td>
<td>I feel very comfortable, but have not had any questions</td>
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Missed student interaction

Present nearly half of the semester
  • Too much windshield time

Exams proctored in person

Anxiety about the potential for technical difficulties

Not ideal

Difficult to engage students through videoconference

Students seemed to blame "the situation," not the instructor

Comments from the Instructor
Suggestions for Improvement

- Microphones throughout classroom
- Be present 0% or 100%
- Hold virtual office hours
- Instructor present in both locations
- Provide recorded lectures online
  - Videoconference to review, answer questions, discuss, etc.
Acknowledgments

• FDSCI 600 Students
• Mrs. Sarah Reasoner
• Mr. Daniel Unruh
• Amy Burgess
• Quentin New
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