

Teaching Across Campuses  
by Videoconference  
in Advanced Technology Classrooms

Russ Walker, PhD  
Ronald Hierbaum, MBA, CPA  
James Powell, MBA, DBA(c)  
Alex Leung, MS, CCAI, CCNA, CCNA Security, NSA4011  
Stanley Hong, MA, CPA

DeVry University-Long Beach, CA  
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Agenda



- About DeVry University
- Overview of classroom videoconferencing
- DeVry University network
- Rationale for videoconferencing courses
- Advanced Technology Classroom (ATC) features
- Instructor training and mentoring
- Experience to date
- Outcomes--successes and challenges
- Best practices and lessons learned
- Questions

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About DeVry University



Long Beach campus

- Founded 1931
- More than 90 US locations and online
- Career-oriented grad and undergrad degrees in technology, science, business, and the arts

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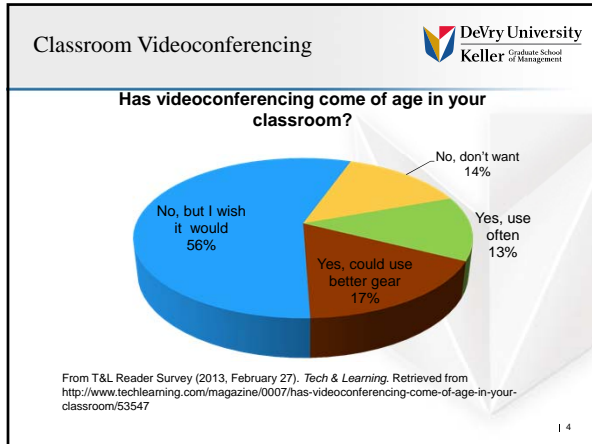
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Video Conferencing Throughout the USA



Location	2 Way	Receive Only	Location	2 Way	Receive Only
Phoenix, AZ	1	1	Kansas City, MO	2	
Los Angeles, CA	3	1	Charlotte, NC		1
Sacramento, CA	1	1	North Brunswick, NJ		1
S.F Bay Area, CA	1		Philadelphia, PA	1	
Miami, FL	1		Pittsburgh, PA	1	
Orlando, FL	1		Dallas, TX	1	
Atlanta, GA	1		Houston, TX	1	
Chicago, IL	4	1	San Antonio, TX	1	
Indianapolis, IN	1		Norfolk, VA	1	
Bethesda, MD	1		<b>TOTALS</b>	<b>23</b>	<b>6</b>

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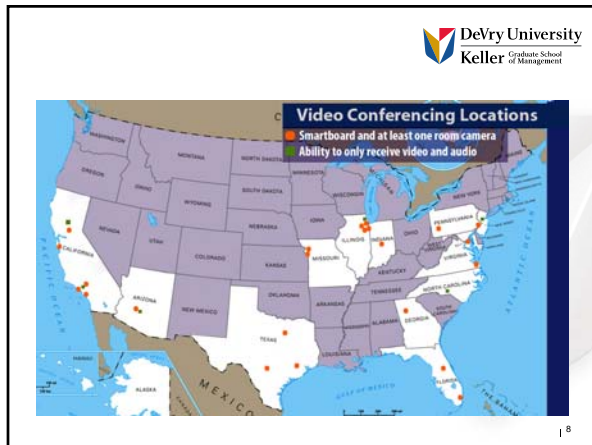
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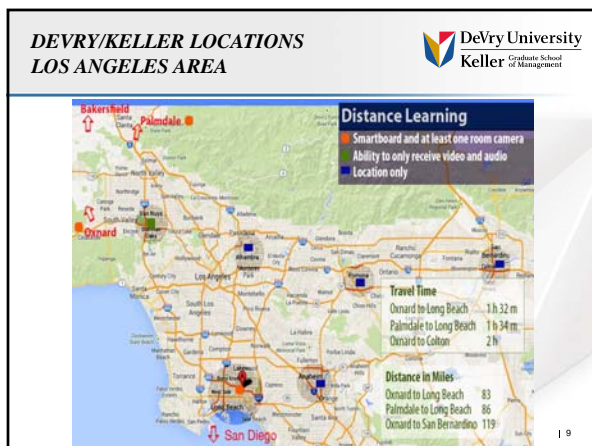
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DeVry University  
Keller Graduate School of Management

**Rationale for Videoconferencing Courses**



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State of the Art Technology

DeVry University  
Keller Graduate School of Management

**Boardroom to Classroom**



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Offer Classes Anywhere

DeVry University  
Keller Graduate School of Management

**Professor can be hundreds of miles away**



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Geared Towards Small Classes 

**Meet at same time,  
allows professor to  
interact 1X1 with  
students**



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Benefit Faculty 

**Simplicity**



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Benefit Institution 

**Relatively low cost**



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Benefit Efficiency 

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**Saves travel time and  
money for professor  
and students**



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Benefit Quality 

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**Facilitates greater  
interaction**



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Benefit Quality 

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**Great alternative to  
online**



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Benefit Quality 

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# Guest speakers



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Benefit Students 

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# Classes not cancelled



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Benefit Students 

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# Effective and Fun



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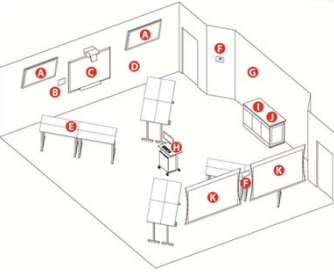

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**ATC Classroom Features**



- A. Two 65" LCD displays
- B. Graphical User Interface touch panel remote
- C. Interactive white board (SMART Board)
- D. Floor to ceiling white board wells
- E. Movable tables and chairs
- F. Two high definition conference cameras
- G. Floor to ceiling bulletin board
- H. Mobile lectern
- I. Source routable matrix control system
- J. Audio Digital Signal Processor
- K. Two widescreen motorized screens with projectors
- L. Session capture recording system (not shown)
- M. Multiple audio, video, and power connections (not shown)
- N. Ceiling microphones and speakers (not shown)
- O. Clip-on lavalier microphones (not shown)

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**LifeSize 10X HD Camera**



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**LifeSize 10X HD Camera Features**



- 10x optical zoom
- Improved low-light handling in medium and large spaces
- Support Full HD 1080p at 30 frames per second
- Support HDMI video output cable lengths up to 170 feet (52 meters)

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SMART Board 600ix  
Interactive Whiteboard System



The image shows a SMART Board 600ix interactive whiteboard system. It consists of a large flat-panel display mounted on a wall, with a projector mounted above it. The screen displays a presentation slide with a diagram. To the right of the board, three markers (red, blue, and green) are shown. The DeVry University Keller Graduate School of Management logo is in the top right corner. A small page number '1 25' is in the bottom right corner.

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SMART Board 600ix  
Interactive Whiteboard System Features



- WXGA (16:10) ultra-short-throw, high-offset SMART UX60 projector
- Touch-sensitive interactive whiteboard, you can draw over the image in digital ink using a pen or your finger
- Ink Aware application in digital ink can be saved for future reference and distribution.

The image shows a close-up of the SMART Board 600ix interactive whiteboard. The board is white and has a large, clear display area. The DeVry University Keller Graduate School of Management logo is in the top right corner. A small page number '1 26' is in the bottom right corner.

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Wall VGA Connection



The image shows a wall-mounted VGA connection panel. It is a dark grey or black rectangular panel with four screws. It has two ports labeled 'AUDIO' and 'COMPUTER'. The 'AUDIO' port is a standard 3.5mm audio jack. The 'COMPUTER' port is a 15-pin D-sub connector. The DeVry University Keller Graduate School of Management logo is in the top right corner. A small page number '1 27' is in the bottom right corner.

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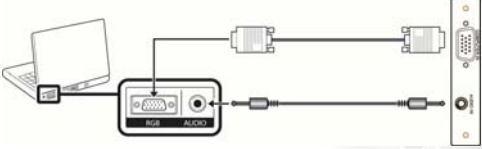
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Student Laptop VGA Connection 

- Up to four workgroups connection to the room displays at the same time. (Four individual student groups)



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EPSON PowerLite 1940W Projection System 



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EPSON PowerLite 1940W Projection System Features 

- Resolution: 1280 x 800 pixels (WXGA)
- Color reproduction: Full color, 16.77 million colors
- Image size: 29 inches (0.74 m) to 280 inches (7.11 m)
- Projection distance: 33 inches (0.84 m) to 336 inches (8.54 m)
- Optical aspect ratio : (width-to-height) 16:10

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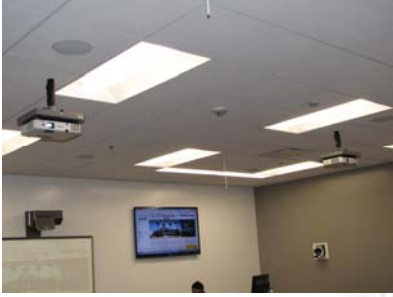

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Microphone



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Microphone



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Furniture



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Furniture



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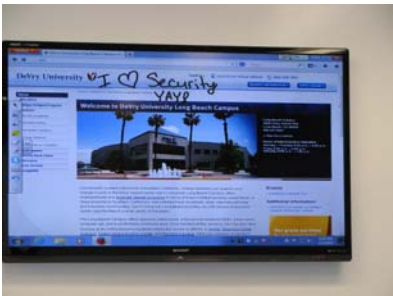
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LCD / Wall Display



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LCD/Wall Display



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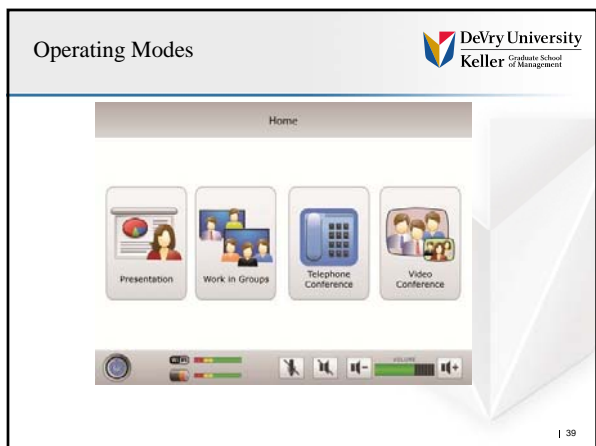
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Presentation Mode 

- Display Selection
- To select display, touch the graphic representing the source you would like to use
- Any source can be routed or re-routed to any display at any time in this mode.



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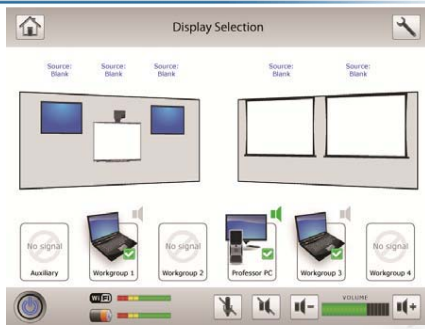
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Display Selection Screen 



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Selected Sources for Displays 



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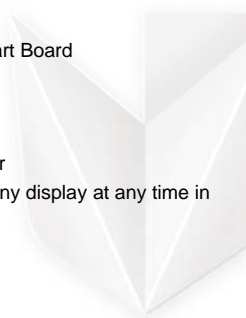
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**Work-in-Group Mode** 

- Default display configuration
- Route the Lectern PC to the Smart Board
- Workgroup 1 to the left LCD
- Workgroup 2 to the right LCD
- Workgroup 3 to the left projector
- Workgroup 4 to the right projector
- Any source can be re-routed to any display at any time in this mode.



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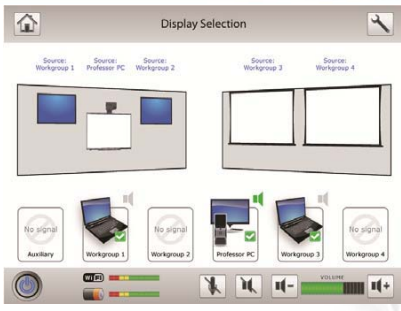
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**Work-in-group Display Selection Screen** 



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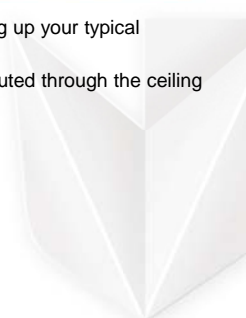
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**Telephone Conference Mode** 

- Primarily, no different than picking up your typical telephone and calling someone
- No handset and the entire call routed through the ceiling microphones and speakers



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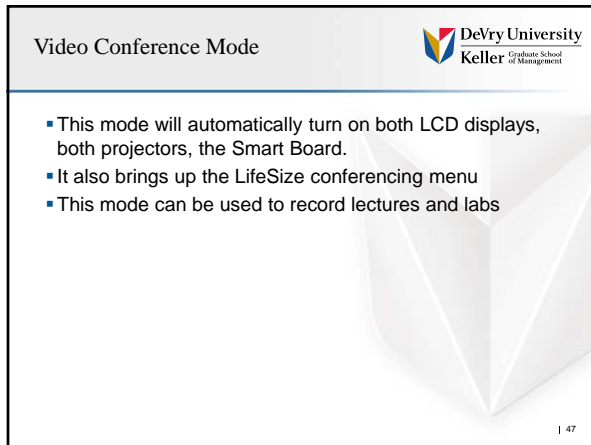
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Advantages for Recording Lectures 

- Effective delivery method for on-line class
- Great learning tool for students
- Making up missing classes due to holidays or emergency
- ATC is just another classroom



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Link for Lecture Video Demo 

- URL: 206.209.96.39
- Username: longbeachDVU
- Password: faculty280



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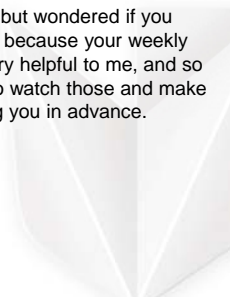
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Student Response (e-mail) 

Hi Professor, I had you for ECT122 but wondered if you teach a ECT125 class also. I asked because your weekly videos on the assignments were very helpful to me, and so I hoped you do that I may be able to watch those and make things a lot clearer for me. Thanking you in advance.

Sage.



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### Instructor Training



- 2-hour session mandatory for new faculty
- Conducted in the ATC
- Hands-on practice essential
- Work with a live remote connection
  - Coordinated in advance with IT
  - Staff at remote location stand in for students
- Future: Add self-paced video pre-training

6:30	Welcome and Introduction - ATC Overview and Concepts
6:40	Local Teaching: Fundamentals <ul style="list-style-type: none"> <li>System startup and shutdown</li> <li>Using the Ictern (PC, Blu-ray player, laptop connection)</li> <li>Connecting student laptops</li> <li>Managing the display screens</li> <li>Using the SmartBoard</li> <li>Using the whiteboard tools</li> <li>Reconfiguring furniture</li> </ul>
7:00	Local Teaching: Applications <ul style="list-style-type: none"> <li>Lecturing</li> <li>Presenting video</li> <li>Small group activities</li> <li>Best practices</li> <li>Dealing with problems</li> </ul>
7:20	Break
7:25	Remote Teaching: Fundamentals <ul style="list-style-type: none"> <li>How remote connections work</li> <li>Managing remote display</li> <li>Remote SmartBoard use</li> <li>Working with audio</li> <li>Managing cameras</li> <li>Integrating eCollege (using the eCollege platform to distribute hardware, etc.)</li> </ul>
8:00	Remote Teaching: Applications <ul style="list-style-type: none"> <li>Lecturing and presenting with remote students</li> <li>Facilitating class discussion</li> <li>Handling board work</li> <li>Managing small-group activities</li> <li>Classroom policies and management (how to take attendance, etc.)</li> <li>Best practices for engaging local and remote students</li> <li>Dealing with problems.</li> </ul>
8:20	Q & A and Wrap-up
8:25	Adjourn

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### Instructor Mentoring



- FT professors assigned as mentors to adjunct and visiting faculty
- Primary point of contact
- Academic Quality Assurance
  - Performed on schedule based on experience level
  - 2 online observations
  - 1 onsite observation



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### Courses Taught via Video



Video Linked Classrooms

Session	Courses	Remote Location	Local Students	Remote Students
Jan 2013	ACCT555: External Auditing	Fremont	11	3
Mar 2013	ACCT304: Intermed. Acct. I	Fremont	14	6
Jul 2013	MGMT303: Principles of Mgmt.	Palmdale	11	4
Sep 2013	BUSN319: Marketing	Palmdale	18	12
Nov 2013	ACCT505: Managerial Acct.	Fremont	20	5
Jan 2014	ACCT600: Fin. Mgmt. Capstone	Fremont	5	4

Recorded Lectures for Online Students

Session	Courses	Online Students
Jan 2013	ECT125: Electronic Systems II	13
Sep 2013	ECT125: Electronic Systems II	5
Nov 2013	ECT122: Electronic Systems I	12
	NETW204: Intro to Routing	29

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**Student Outcomes** 

Teaching a Blended Course in Conjunction with Teaching Students at a Remote Site

Course	Session	Location	No. of Students	Low Grade	Avg. Grade	High Grade
Intermediate Accounting I	Mar 2013	Remote (ATC)	4	71.6%	83.2%	92.4%
		Local (ATC)	12	43.8%	81.5%	95.1%
	Sep 2011	Local (non-ATC)	21	47.4%	81.4%	96.6%
Marketing Management	Sep 2013	Remote (ATC)	9	46.5%	80.5%	93.6%
		Local (ATC)	20	47.4%	81.6%	97.4%
	May 2013	Local (non-ATC)	12	0.0%	60.3%	95.3%
Principles of Management	Jul 2013	Remote (ATC)	4	75.9%	82.7%	91.7%
		Local (ATC)	11	75.6%	89.9%	99.8%
	Sep 2012	Local (non-ATC)	17	60.2%	79.2%	92.9%

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- What Went Well** 
- Audio was clear (usually)
  - Split-screen displays + SmartBoard provided good visibility to local and remote students
  - Videos were especially effective
  - Panning and zooming focused attention
  - Students were engaged and considerate
  - Students tolerated minor technical glitches
  - Muting audio allowed small-group work
  - Teamwork by faculty, students, and staff across locations
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- Challenges** 
- Initially inadequate training (faculty and IT staff)
  - Fuzzy display of remote classroom on projectors
  - Students dispersed around the remote classroom
  - Mixed groups across locations were not feasible
  - Involving all students consistently and equitably
  - Lost connections/system shutdowns
  - Inability to distribute physical artifacts
  - Room does not accommodate large classes well
  - Fishbowl effect
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Best Practices When Teaching in the ATC 

- **Preparation**
  - Provide training and mentoring
  - Provide access for experimentation
  - Welcome, explain, set expectations, and commit
  - Arrive early to check setup
  - Plan ahead for special situations
- **Classroom management**
  - Engage students by name at all locations
  - Encourage small-group interaction
  - Use competition
  - Encourage questions
  - Be aware of camera
- **Logistics**
  - Use a common online learning space
  - Distribute all materials online
  - Collect cell phone numbers of remote students
- **Technology**
  - Have computer and printer in each room
  - Have IT support readily accessible
- **Always have a plan B**

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Student Comments 

- [My suggestion is] to not do it over video conferencing technology. There were some problems with it that made it difficult, and it's not the easiest way to learn in the first place because it lacks the same interaction of being in the classroom with the professor, but it's not like an online class where you know you have to do everything yourself. You're trying to learn by hearing him and seeing the notes on the screen but it's not the same.
- The multimedia room was great! It was very functional and the professor made us feel like we were a part of the class in every sense. The professor introduced some valuable knowledge and skills that I can definitely use for my academic and professional career. He taught the material using really fun and interactive methods, which helped us understand the lessons even better.

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Contact Information 

Russ Walker	<a href="mailto:rwalker2@devry.edu">rwalker2@devry.edu</a>
Ronald Hierbaum	<a href="mailto:rhierbaum@devry.edu">rhierbaum@devry.edu</a>
James Powell	<a href="mailto:jpowell@devry.edu">jpowell@devry.edu</a>
Alex Leung	<a href="mailto:aleung@devry.edu">aleung@devry.edu</a>
Stanley Hong	<a href="mailto:shong@devry.edu">shong@devry.edu</a>

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