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MAGNA REPORT

About this Report

The Best of Teaching with Technology highlights some of the top-rated sessions and presenters from the 2016 Teaching Professor Technology Conference. This conference is now called the **Magna Teaching with Technology Conference**.

The goal of this report is to give you a window into one of our best conferences, and to expose you to new pedagogical methods that incorporate technology.

Subjects include virtual reality, universal design, and synchronous technologies...to name a few. With the right tools in your hands, you can help your students excel.



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-  Interactive Sessions
-  Best Practices
-  Actionable Ideas
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-  Greater Competence

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Using *Pecha Kucha* for Student Presentations of Research Projects

Gloria Niles, presenter at the Teaching Professor Technology Conference, 2016

Do you assign student presentations as a component of a research project for your course? Are you seeking strategies to improve the effectiveness of multimedia presentations? Extraneous text, reading from PowerPoint slides, off-topic tangents, and distracting animation features are all common pitfalls of student presentations. *Pecha Kucha*-style multimedia presentations are an effective instructional approach to improving the efficiency and effectiveness of student presentations.

Pecha Kucha is a presentation style that originated in Japan in the field of architecture. The parameters of a *Pecha Kucha* presentation require exactly 20 slides that automatically advance every 20 seconds. Each slide presents a single image that directly correlates to the presenter's key concept. Text is limited to a maximum of five words, presented in a large font size. This format keeps *Pecha Kucha* presentations succinct and fast moving.

The effectiveness of *Pecha Kucha*-style presentations supports the cognitive theory of multimedia learning (CTML). According to Mayer (2003, 2007), in multimedia learning, the learner engages in three cognitive processes: selecting, organizing, and integrating information. The selection process requires identifying information that is simultaneously presented and processed through both auditory and visual channels. The organizing principle requires the multimedia learner to coordinate the *Pecha Kucha* parameter of 20 slides with images and narration that coherently present the relevant content of the student's research. The integrating principle challenges the multimedia learner to explicitly correlate the selected image with the 20-second slide narration.

INSTRUCTIONAL APPROACH

The following steps outline the instructional approach for using *Pecha Kucha*-style presentations in conjunction with student research projects:

1. Instructor assigns a research project that includes a *Pecha Kucha*-style presentation.
2. Instructor outlines the parameters and models or provides examples of *Pecha Kucha* presentations.
3. Instructor scaffolds the assignment using a *Pecha Kucha* planning template (see example).
4. Students complete the research portion of the project first.
5. Students find references and resources that address their research question and develop a thesis. Then they submit annotated references that support their thesis.
6. Instructor provides formative feedback on the thesis and annotated references.
7. Students develop an outline of the 20 slides with key concepts that support their thesis.
8. Students search for images that support each key concept and develop a 20-second script for each slide.
9. Students practice, revise, and edit their presentation until they feel confident that their narration and images are effectively organized and integrated.
10. Students present the *Pecha Kucha* presentation of their research project.

The *Pecha Kucha* planner template scaffolds the development of the research project and presentation. Scaffolding helps the student with time management and organization of the project components. The *Pecha Kucha* presentation planner assists students in selecting, organizing, and integrating their research project with the visual and auditory narration design of their *Pecha Kucha* project.

The planner highlights the importance of students' first completing their research project before designing their *Pecha Kucha* presentation. Additionally, the planner is used to collect, annotate, and cite references for the students' research. Alternate text and attribution credit for images are also collected using the planner. The planner also requires students to write a script for each slide. The development of 20-second scripts encourages students to practice and edit their 20-second narration for each slide.

The number tally located on the bottom of the planner promotes the recommendation that the students practice their presentations at least 20 times. Repetition and practice improve the clarity, fluency, and timing of the auditory narration of the presentation.

The planner can be collected periodically for formative evaluation. The three steps outlined in the planner provide suggested opportunities for formative feedback during the process of the project. Additionally, the planner can be submitted with the presentation, as a summative evaluation component of the research project.

ACCOMMODATING VARIOUS COURSE DELIVERIES

The *Pecha Kucha* can be designed to accommodate face-to-face, online, and blended class formats. In face-to-face classes, students may be required to present their *Pecha Kucha* live to the class. In an online course, students can record their narration and upload a recorded *Pecha Kucha*. Either live or recorded presentations can be accommodated in a blended course format. Alternatively, students may be required to present both a live and recorded version of their presentation. Try *Pecha Kucha* with your class!

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PECHA KUCHA PRESENTATION PLANNER

Step 1 Topic Selection	Name:		Research Topic	
	Research Question			
	Thesis Statement			
	Step 2: Key Concepts & Reference		Step 3: Presentation	
	Slide Key Concept	Source (APA In-Text Citation)	Image Description & Image Credit	20-Second Script
	Slide 1			
	Slide 2			

Download your *Pecha Kucha* Planner

Virtual Reality in the Classroom

John Orlando, presenter at the Teaching Professor Technology Conference, 2016

Virtual reality (VR) has taken the world by storm over the past two years. *The New York Times* is filming news events in VR, which allows the viewer to experience being at the actual location of the story. Football teams give new players VR experiences of plays filmed from their on-field position so they can see how the plays develop around them and how they can respond in different situations. The first NBA game of 2016 was filmed in VR from the front row and streamed live on the web so viewers could experience front-row seating at a game. The Sundance Film Festival even added a VR category.

One of the reasons for the explosion in interest is that Google's Cardboard Camera Viewers and apps make watching and creating virtual reality videos cheap and easy. The viewers can be purchased for around five dollars on Amazon or eBay and attached to any smartphone to allow the user to view VR content with the free Cardboard Viewer app from Google Play. Plus, you can shoot VR videos with your smartphone using the free Cardboard Camera app from Google Play. You simply shoot a video while slowly rotating around and narrating the scene. The video allows viewers to look around the scene you've created by rotating their heads and getting a 3-D experience of being there.

Virtual reality allows students to gain experiences that are not possible with photo or ordinary video.

Virtual reality allows students to gain experiences that are not possible with photo or ordinary video. For instance, Carnegie Mellon's Entertainment Technology Center is putting out student-created VR videos that provide an emotional experience. One such video, called "Injustice," puts the viewer in the center of a street scene of racially motivated police brutality and asks questions about what the viewer would do (<http://bit.ly/2fpTeAZ>).

The ability to choose your perspective also provides a sense of place that is lacking in photo and ordinary video. While touring the Tomb of Moses with the Sites in VR app, the tomb itself was not the most striking; rather, the surroundings struck me the most. The tomb seemed almost hidden away in a back room, with a cheap old fan hanging above it with cords haphazardly coming out in all directions. The staging seemed at variance with the importance of the subject. Looking around also gave me a sense of the Middle Eastern heavy stone-and-tile architecture of the building. This made it more akin to the experience of actually being there, including an impression of how Middle Eastern architecture and culture differs greatly from my own.

There are two ways to incorporate VR into the classroom. First, either the instructors or students can shoot their own VR films. A history instructor vacationing in Rome can shoot VR films of the places he or she visits to post as course content. A geology instructor can make VR videos of geologic formations in the area while explaining how their features represent principles studied in the course.

Similarly, students can make VR content as assessments. Students in an urban planning course could be asked to film five examples of urban planning in their area while explaining how the structures embody course concepts. Architecture students could be required to shoot VR videos from inside different structures to illustrate how the designers solved engineering problems.

The second option is to use VR content created by an organization. Google released its Expeditions app to allow instructors to guide their students through tours of different locations, such as mosques, museums, and national parks. The instructor logs in as the Expedition guide, and the students log in as participants. The students then use their own smartphones to see what the instructor broadcasts through his or her own phone. The instructor can even drop a circle and arrow onto the students' screens to draw their attention to a particular feature.

Microsoft has gotten into the game with its HoloLens system, which inserts 3-D content into the viewer's location. In one example, medical students walk around a 3-D image of the body and different parts to learn anatomy. Take a look at this video to learn more: <https://youtu.be/h4M6BTYRIKQ>.

The New York Times has put out a free app that broadcasts news events, such as the Paris terror attack vigils, as well as documentaries featuring subjects like the Syrian refugee crisis and scientific content. One interesting video is "Seeking Pluto's Frigid Heart," which takes you on a tour of Pluto through the Voyager spacecraft.

The above-mentioned sites in the VR app provide tours of a variety of locations around the world, including churches, buildings, cities, and natural areas. Within is a VR app that pulls together interesting content from different sources, including films and documentaries from the Sundance Film Festival. (Make sure to watch the very entertaining "Invasion!" video.) The VR in OR apps provide tours of medical procedures shot from a surgeon's perspective. Jaunt VR provides narrated tours of locations, such as Cuba and Machu Picchu, as well as first-person accounts of events, such as the London subway bombings.

VR content is being added daily. Consider how you might use VR in your courses.

Let's Solve the Right Damn Problem: Intentional Teaching with Technology

Flower Darby and Wally Nolan, presenters at the Teaching Professor Technology Conference, 2016

We've all experienced failed learning activities, such as painful class sessions, online disasters, or group projects gone wrong.

When we analyze what went wrong, we usually wring our hands and lament the state of college students today, but is it possible that we ourselves are the inadvertent cause of many of these problems? Could our lack of intentional planning be the issue?

Misalignment in our classes can cause many problems. Consider what happens when the wheels of your vehicle are out of alignment. The tires aren't all pointing in the same direction, making it difficult to steer, causing undue strain and wear, and possibly endangering the safety of those in the car.

The same things can happen when we teach a class that is out of alignment. It's hard to direct the flow of learning; learning activities and assessments become more burdensome than they need to be; and the safety and well-being of those in the car, so to speak, are unnecessarily put at risk.

Misaligned technology tools often cause more problems than they solve.

Misalignment happens in many ways. For example, we might include a group project in our classes with no real sense of the purpose of the project. Have we thought through our teaching and learning goals for the group task? Do those goals support the course learning objectives? Or did we include a

group project because our class size grew and we couldn't keep up with grading individual assessments?

When we don't carefully align learning activities to course learning objectives, problems develop in our classes. In our group project example, students will likely recognize that there is no real reason to be doing the group work. This perception leads to frustration and demotivation—not a good way to begin a meaningful collaborative learning task.

We all know that teaching is a messy business and there are pain points in our classes. Our focus here is to investigate how misaligned technology tools often cause more problems than they solve.

It's been said that, with a hammer in your hand, every problem looks like a nail. If the problem truly is a nail, then the hammer is the best solution. But what if the problem is actually a screw? If you apply the hammer to that problem, you're going to do a lot of damage.

Taking the time to accurately diagnose the problem—determining what's really at the bottom of the surface-level pain we experience—is a key step in choosing the best technology tools to solve the right problems in our classes. Instead of dealing with the surface issue, the problem that is readily apparent, we need to dig deeper to get an accurate diagnosis. In other words, we need to solve the right damn problem if we want to truly resolve the pain point.

We can get to the root of the problem by asking a series of “why” questions. Common problems include students who are not attending class or are being unprepared and disengaged when they get there. Let's

ask, “Why are my students not coming to class? Why are they so disengaged and unprepared? Are the learning materials and activities relevant? Meaningful? Why am I asking my students to do what I’m asking them to do?”

Asking these questions peels back the layers of our classes to identify the problem at the core. Having torn down the class and accurately diagnosed the real problem, we can now rebuild it, aligning all the major elements to create a structurally sound and meaningful class.

Backward design can help. Wiggins and McTighe (2005) argue that we should plan our classes in a backward fashion. There are three main steps in this design approach:

1. Start with the end of the class—the destination. By the end of the semester, what do you want your students to know and be able to do? Craft measurable course learning objectives accordingly.
2. Design summative and formative assessments that will measure student achievement of those objectives.
3. Plan instructional materials and learning activities to support student success on assessments. What content and practice will equip students to succeed?

Walking through these design steps will result in a well-aligned class where all the components support each other. That alone should minimize teaching and learning problems.

Recall the real problem we identified earlier. With a class that is in alignment, we can now identify technology tools that support the class design and address the right damn problem.

Aligning technology with the course materials and learning activities gives us a better chance of implementing effective tools. Combining this approach with solving the real problem at hand, the core issue, is sure to prevent the kind of misalignment that is caused or made worse by the wrong technology solutions.

When we solve the right problem with the right tool—using a hammer if the problem is a nail or a screwdriver if the problem is a screw—we go a long way toward preventing classes that are out of alignment. In so doing, we create a safer, more pleasant learning journey for all.

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BONUS EXAMPLE

This is a story of an advertising instructor that illustrates the concepts in the previous article.

How does this design approach play out in today’s college classroom? Mary is an advertising instructor who is frustrated with the way her large-enrollment introductory class is going. She has several problems that she doesn’t know how to solve—problems that we all face in our teaching.

Mary's students frequently ditch her lecture classes. When they do show up, they're neither prepared nor engaged. Another consistent problem is their cheating on the multiple-choice final exam; the lecture hall seating makes it easy to look at a neighbor's answers.

One day, after weeks of feeling helpless, Mary receives a cold call from a clicker representative, who tells her this classroom response system will solve all her problems. She can take attendance using the device and ask intermittent questions to ensure students are still awake. Also, by interacting more with the material, students should know it better and be less inclined to cheat on the final.

Mary clutches at this solution as if it were a lifesaver thrown to her in the rough seas of teaching today's students. She immediately comes to our teaching and learning center to get trained and set up with clickers for the following semester.

To be fair, classroom response systems can be very effective, but when Mary attends training, we call a time-out. "Sure, clickers are a solution," we say, "but are they the right solution?"

Mary agrees to pause and explore the root cause of the problem. Why are students so bored and disengaged? Why don't they want to come to class? Why aren't they doing their reading? Why are they so easily distracted during the lectures? Why are they so apathetic about the material?

Soon it's clear that Mary herself is bored and disengaged with the class. She admits her lectures are probably dull. They cover the same material she'd assign as reading. Mary has inadvertently trained her students to come to class unprepared, knowing they would get the same information without bothering to read.

Mary eventually realizes that the textbook is the source of the problem. It's outdated and boring, and it does nothing to pique the interest of introductory advertising students. Large sections of the book cover dinosaur-age topics like yellow pages ads. There's nothing about today's advertising on Spotify, YouTube, targeted banner ads—nothing current at all. The text is completely irrelevant to students who are considering a career in advertising.

At last we've identified the real problem. The source of the pain is the outdated textbook. Now, we can work through backward design to develop a more aligned, structurally sound class.

This begins with careful thought about the final destination. Upon reflection, Mary identifies her big goal: students should explore whether advertising is the career path (and therefore the major) for them. She redevelops her course learning objectives with this goal in view.

Next, instead of a multiple-choice exam, Mary designs a final project in which students create an ad with a team. This replicates what happens in the industry. Incidentally, this resolves her concern about students' cheating on the final—no final exam, no cheating on it. In this way, Mary develops a solution to an academic integrity issue through an authentic assessment.

The third step in backward design is to plan instructional materials and learning activities to support student success on the assessments in the class. Would reading an irrelevant textbook prepare students to complete a team advertising project successfully? No. Mary cuts several chapters of the textbook, retaining only those that lay out foundational principles of advertising.

Mary replaces the discarded chapters with relevant and timely online articles and blogs. She invites industry leaders to guest lecture in her class through videoconferencing or video recording software. Now, her students are hearing from experts who are working in the field and can share their insights and perspectives. Because the speakers and the new content are immediately relevant and much more interesting,

many of the initial problems naturally resolve themselves. Students want to be in class, they are motivated to do their homework, and they are actively engaged when they get there.

The result of this process is a well-aligned class, with the wheels all pointing in the same direction: the final destination. In the end, Mary decides against clickers. Clickers would have been a Band-Aid solution that did not address the core issue of the outdated textbook.

Instead, the most effective technology solution for Mary turns out to be online resources, conferencing and recording applications to bring in guest speakers, and students' own devices and media tools to help them create their advertising projects.

Take the time to accurately define the problem. Step through backward design to develop a structurally sound class in which all the components line up and support each other. Identify technology that supports learning activities, assessments, and course objectives and also solves the real problem, the root cause of surface pain. This approach ensures the wheels of your class are aligned so that all students can enjoy their learning journey to the final destination. Safe travels!

What's Going On behind the Blank Stare?

Tim Wilson, presenter at the Teaching Professor Technology Conference, 2016

At Magna's 2016 Teaching Professor Technology Conference in Atlanta, I offered some research that extends our understanding of what might be happening inside our students' brains and what might be drawing their attention. Regardless of our subject area, we've all had moments where some students appear to hang on every word, gobbling up our messages, images, graphs, and visuals with robust engagement. Within those very same classes, however, there will be a degree of confusion, perplexed looks, or at worst, the blank stare! In my field of anatomical education, like many other STEM* disciplines, the almost ubiquitous use of multimedia and other increasingly complex computer visualizations is an important piece of our pedagogic tool kit for the classroom, small group, or even the one-on-one graduate-level chalk talk. Although a picture indeed does say a thousand words, the words that each person hears, or more importantly, comprehends, will vary widely.

My lab, the Corps for Research of Instructional and Perceptual Technologies (CRIPT Lab), uses the experimental paradigm of spatial ability to explore how individuals use images to learn. Each of us has varying degrees of spatial orientation, sense of direction, and ability to mentally manipulate objects or spatial ability. This trait can be measured using a variety of tests that indicate our prowess. It is thought that spatial ability influences our educational choices and even how well we do in those subjects (Wai, Lubinski, and Benbow 2009). We use the cognitive theory of multimedia learning (Mayer) and the cognitive load theory (Valcke 2002) to suggest persons with lower spatial ability undergo higher extraneous learning loads as they scramble to keep up with complex visualizations that are sometimes utilized to demonstrate phenomenon. We have commenced collecting neurophysiological data during learning and testing. Rest assured; these are not a catch-all tests of intelligence, but they do have reasonable and growing predictive applicability.

Education doctoral student Jay Loftus studied how cerebral blood flow is elevated in persons with high spatial ability compared to low spatial ability when using static pictures to learn bones of the feet or large vessels in the chest. The goal wasn't to learn their names or functions, but rather to understand how these anatomical parts fit together. Consistently, persons with high spatial ability score better on tests he devised, and they did so with higher cerebral blood flow. For incorrect answers, higher spatial-ability persons had a slight fall in blood flow, but lower spatial-ability persons' blood flow fell below their baseline, indicating a potential shunting of blood to other areas of the brain in an attempt to answer the question. We tend to think of this as a higher cerebral "work rate" to get the job done. In a sense, low spatial-ability persons are experiencing higher extraneous cognitive loads in this learning and testing modality (Loftus, Jacobsen, and Wilson 2016). Loftus is currently studying these effects using dynamic images, common to many multimedia environments, and the effect seems exacerbated further.

We wanted to probe deeper to better understand whether spatial ability is "all in the head." We took it a step further to see whether people of varying spatial abilities examine visualizations in the same fashion. Doctoral student Victoria Roach incorporated eye tracking technology to address her questions. Eye tracking uses high-speed cameras to observe where the eye moves while observing a screen. With this technology, she measured the where and when-related events as they pertain to examining a visual. From a visual and cognitive perspective, we as humans process visual information only when we fixate on things in our visual world. So Roach developed a measure of salience ("where" combined with "when") within

each image. She monitored persons while they undertook tests of mental rotation. Thus, at the end of the experiment she knew their mental rotation score, or how well they had done on the test, as well as their attention salience during the test.

Interesting results have begun to emerge from her experiments. First is that high and low spatial-ability persons pay attention to different parts of the same presented image. That is interesting in itself, but consider that where one looks within the picture may impart clues to better orient and deduce meaning. Going a step further, we often place time limits on our tests, and in doing so, we separate further the high from the low spatial-ability learners, giving them less time to concentrate on the important aspects and thus stymieing lower spatially able learners. Give people more time to complete the tests, and we find the obvious: scores tend to increase across the board. More importantly, though, lower spatially able persons start to pay attention to similar salient pieces of the visualization as their higher spatial-ability counterparts (Roach et al. 2016). In her yet-to-be-published research, Roach has gone as far as defining the most salient area of an image from a group of highly spatially able persons; she then shows this salient area to low spatial-ability persons, saying only that it's an important place in the picture. The coached low spatial-ability persons increase their score considerably, equivalent to raising a grade point average, and the effect is enduring as they continue to do better on subsequent "noncoached" tests.

Putting this research together is empowering for teachers and students. First, we need to realize that we as educators can alter student cognitive loads in a variety of ways through good, bad, or ugly demonstrations. If we inadvertently increase the extraneous cognitive load of a diagram, graph, or visual, the effects are widespread and differential across our learners, and those with lower spatial abilities suffer the most. Is spatial ability a dependent variable of your tests? Now imagine what happens in a testing situation where time limits are short and stakes are high. Finally, there is immense power in pedagogy and our ability as educators to lead students to understanding complex visualizations. If we direct attention, show students where and how to look at a phenomenon, the divide between spatial ability at least is shortened, and our learners can concentrate on the message (knowledge) rather than the visualization (medium).

* *STEMM is often referred to as disciplines involving science, technology, engineering, and math, and we often include medicine to represent allied health science fields.*

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Wake Them Up! Ten Ways to Enliven Your College Classroom

Julie Smith, presenter at the Teaching Professor Technology Conference, 2016

When I first began teaching undergraduates, I had this naïve idea that I would stand in front of the lecture hall speaking eloquently about my field and they would sit there in rapt attention. It didn't really turn out that way, as I'm sure you can imagine. Our students are 21st-century learners. That means they no longer benefit from the "sit and get" style of teaching. Although a decent lecture is sometimes necessary, I discovered something very selfish about myself: I was bored with lectures. I became obsessed with different ways to engage my students and bring my classroom to loud, boisterous life—not necessarily for their benefit, but for my own. The extra learning and enthusiasm were just a bonus.

I became obsessed with different ways to engage my students and bring my classroom to loud, boisterous life

This past fall I presented a session at the 2016 Teaching with Technology Conference in Atlanta (formerly the Teaching Professor Technology Conference) about my mission to engage my students. I called it "Wake Them Up! Ten Ways to Enliven Your College Classroom." Give one of the following tools a try!

Voxer: This is a free walkie-talkie app I use to communicate with students. Since I am an adjunct instructor, I don't have an office. I give students my Voxer profile so that if they have questions, they can reach out to me. This is especially great for introverted students who may not want to ask a question during class. I can press a button, speak, and respond to them. And it's asynchronous; so they can listen at their leisure, and so can I. It makes me accessible, and I think the voice inflection from the voxes add so much more to the message than an e-mail would.

QR codes: I flipped my large Intro to Mass Media course two years ago, and QR codes made it easy. Using free QR code generators, I set up links to each of my online lectures and placed them in the syllabus. This makes it possible for the students to watch the lectures on their phones, which, let's face it, is where they consume information anyway. We've also had media scavenger hunts using QR codes. (Note that QR code readers are free!)

Image creation: Our students are not just consumers of information—they are creators. Giving them tools to create images to use in social media on the day's topic or as exit tickets is a great way for them to unleash their creativity. We've used meme generators, posters, and apps like Word Swag or Type-O-Rama.

In-class, real-time formative assessment: I'm a huge fan of cell phones in the classroom. I've stopped considering them the enemy, and I strongly feel that if a student is on his or her phone during a nonphone activity in class, then I need to step up my game. I have learned to embrace them as tools and partners in my classrooms. Sites like Kahoot! and Quizizz can provide instant feedback as well as phone/tablet/laptop engagement. I use these sites to determine baseline knowledge of certain topics and to review for exams. If the class does poorly on a topic, I know we need to revisit it.

Experiences: Dave Burgess, author of *Teach Like a Pirate*, believes that students do not remember lessons or lectures—they remember experiences. Would students come to your class if they didn't have to? Why

not surprise them occasionally with something out of the ordinary, just to keep them on their toes? When we analyze magazine advertisements, I tell my students, “Okay, now call the ad department of the magazine and get their rates.” After the shock wears off, they usually tell me they thought it was crazy but they will never forget it.

Skype: This is a fantastic and underutilized tool. Have you ever wished someone could be a guest speaker in your classroom? Why haven’t you asked them? We’ve had authors Skype us when we talk about the publishing industry, and we’ve had Nev Schulman from MTV’s *Catfish* Skype us about producing a reality show. Scientists, researchers, authors, and historians are all ready and willing to be asked. After all, who doesn’t like to feel important and talk about themselves? You have nothing to lose. Just ask! Students will love it.

Giant Post-its®: The students always know I’m up to something when there are giant Post-its on the walls of the classroom. These come in handy for group work or brainstorming, and they get the students out of their seats. At the end of the class, students can take photos of the giant sticky notes with their phones instead of taking traditional notes.

Remind and Padlet: These are two great websites that work well together. I use Remind to send out large group texts at once (the students sign up at the beginning of the semester, and I can text them without seeing their number or their seeing mine) a few minutes before class. In that Remind text message, I include a link to a Padlet that I’ve created. Padlet is a free poster-making website. When we’re about to talk about the publishing industry, for example, I will send out a Remind message with a link to the Padlet asking, “What’s your favorite book?” Students receive the text on the way to class, tap on the Padlet link, and then type in their favorite book title. Before class even begins, the screen at the front of the room is filled with student-centered information that they provided.

Phone polling: This is another great use for the cell phones in class. Using sites like Mentimeter or Poll Everywhere, students can answer survey questions, create word clouds, or participate in polls. This is another excellent way to prepare for exams or get some authentic, anonymous data from students.

Twitter: Did you ever think about having a class discussion without using any voices? Twitter is a fantastic tool for that, and this is another great way to bring your introverts into the mix. Simply tweet out a question using the class hashtag that you’ve created. Using sites like TweetBeam or Twitterfall, the responses show up in front of the class if the students include the same hashtag. Be prepared to find those quiet students hilarious and clever in this environment—this is the way they usually communicate anyway! Some of our best discussions have taken place in a quiet room.

Engagement can happen outside the classroom as well. If you give out the same assignment to every student, you haven’t prepared an assignment; you’ve written a recipe. Why not give students options? There are sites where they can create infographics, cartoons, podcasts, mind maps, and videos . . . the list is endless. Our students need to be makers, not memorizers. Give them options; give them choices to increase the ownership of their learning.

These tools are all fun, but really there is no substitute for teacher enthusiasm when it comes to engagement. A healthy sense of humor helps, as does the inability to feel shame! I’m willing to try just about anything, because my goal every day is for my students to think I wonder what Julie Smith has up her sleeve today. Take a chance—not just for their benefit, but for yours too.

Ten Concierge ‘Keys’ for Supporting Individualized Online Course Development

David S. McCurry and Bonnie B. Mullinix, presenters at the Teaching Professor Technology Conference, 2016

Large group training workshops to facilitate online course design can be a mechanistic experience and a nightmare to schedule given perpetually busy faculty with overloaded calendars. Equally ineffective static, “self-serve” online materials only go so far and can leave faculty disengaged or confused (Riegle 1987; Howland and Wedmen 2004). Personal support services modeled on the hotel concierge are used successfully in health care and private industry and, to a lesser extent, in higher education (Michelau and Lane 2010). They hold promise as an approach for supporting online course development.

Wes Anderson’s film *Grand Budapest Hotel* (2014) offers a clear and humorous presentation of the concierge’s skills, insights, and services. In creating a “Concierge Model of Faculty Online Course Development,”* we have developed some guidelines for interacting with and supporting faculty that incorporate this concierge approach. As faculty (and faculty developers), we recognize that teaching is a highly individualized and personal process, which intersects the individual faculty member’s own perspective, content knowledge, and expertise. The 10 keys below outline the central concepts associated with this approach:

1. The course is being developed, not the faculty. Shift the focus from “faculty development” to “course development.” Naturally, the faculty members will develop during the process as they learn new skills and approaches, but the focus on course development allows us an objective basis for construction and reference.

2. Meet faculty members where they are. Reach out to faculty members in situ whenever possible or convenient, not just physically in their space, but where they are in terms of their practice. This helps faculty members learn new skills and techniques in comfortable and familiar surroundings, increasing the likelihood that they will be able to replicate any demonstrated behavior.

3. The faculty and course are unique. Listen carefully and identify the essential content and suggest tools and design elements without presenting a “one size fits all” model. While templates and common formats may be helpful, each course and faculty member is individual and unique. Some content may suggest or lend itself to being presented in specific ways through text, media, or demonstration. Ultimately, any course design is a complex confluence of the individual faculty member—with all of his or her unique characteristics as a human being, personality, history, proclivities, and habits, both good and bad—and the course content and activities.

4. Keep it simple. Keep suggestions about things to change simple and specific. Suggested course improvements should be specific, measurable, and obtainable. Online teaching uses different processes of communication, presentation of content, and assessment that are often complex and unfamiliar. A faculty member may spend years learning what works for his or her classroom course, but may be expected to adapt those processes to an online environment in a matter of weeks. The changes should be implemented in a visible, manageable way, one at a time.

5. It takes time. Redesigning a course for online delivery is a serious and time-consuming undertaking. Faculty and instructional designers are busy people, and time is always considered a precious commodity.

There are no easy or quick ways to redesign a course for online delivery, so having a clear plan and getting a firm commitment from the outset is important.

6. It will change them—and you. Redesigning a course should leave both the concierge designer and the faculty member enriched, smarter, and wiser. Course redesign is a reflexive process that starts with a current course; explores and interrogates directions, desired outcomes, and goals; and then moves to build a unique learning experience. As concierge instructional designers, we are privileged to be able to peer into the content and teaching of an individual course and engage the mind of the faculty member at work. At the same time, we consider ourselves students so that we may see the course through the student lens. In this way, the course, the faculty, and the designers are all changed by this process.

7. Rubrics are our friends. Incorporate rubrics to provide clarity and direction to the students and demystify the content and assessment of learning. A well-written and faithfully followed rubric yields good results. Rubrics take several forms, but the main intent is letting students know the details and form of successful responses to assignments. Exemplary course assignment instructions should include well-defined descriptions of levels of expectations, performance, and/or skills reflective of and in rubric criteria.

8. What to keep and what to let go. Ask what elements or qualities of the traditional course are essential and should be kept at all costs. Have the faculty member identify the course foundations that should not be lost in the transition. These become the critical aspects of the course experience that need an effective online equivalent. Whether a specific bit of content or a communication process, finding the appropriate online equivalent becomes an opportunity for the faculty member to reassess the usefulness of assignments or activities in the new environment.

9. It is their course, not yours. Remember your role in the overall exchange of ideas. Humility is a valued trait. As an instructional designer, you may well know more about course design, but the instructors have to teach it. While the faculty author may “own” the course, the course concierge offers insights that can make a course an effective online learning experience.

10. There is always more to do. A good course is never finished, as course development is an ongoing process. Look for new ways to improve some aspect of the course, and also recognize and leave intact those elements that provide evidence of success. “If it ain’t broke, don’t fix it.” The process of renewal should always be part of good course redesign, making each course an “always in beta” project.

With these 10 keys in mind, approaching online course design can be a constructive and collaborative team effort.

** A manifesto for faculty developers and course designers, borrowing the “Society of the Crossed Keys” from the movie Grand Budapest Hotel, was presented at the 2016 Teaching Professor Technology Conference in Atlanta. Session participants helped refine the “10 Keys.”*

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Online Teaching Boot Camp

Cheryl Fulgham and Susan Roberts, presenters at the Teaching Professor Technology Conference, 2016

Cultivating engaging online learning environments requires passion for teaching, an understanding of e-learning, plans for design, and the knowledge of where to find resources. Faculty and learning specialists know that building dynamic spaces for learning for the online modality is a challenge. Here are four guiding principles for those who are new to online teaching.

Teaching with technology is an art and a science

Good teaching is good teaching. The principles of teaching are the same no matter the method or the tools: good content, engagement, collaboration, active learning, and proper assessments. What makes teachers effective is often who they are as people and how they relate to their students.

As Palmer said, “Good teaching cannot be reduced to technique; good teaching comes from the identity and integrity of the teacher.”

Design the course curriculum following these objectives:

- Communicate in a clear and concise way, and communicate often.
- Represent yourself as real, caring, and willing to help.
- Design learning objects to be aesthetically pleasing and easy to follow.
- Facilitate continual engagement through hands-on learning.

What makes technology powerful is not the technology itself, but the teacher behind it.

Understanding e-learning as a tool

What makes technology powerful is not the technology itself, but the teacher behind it. All too often, technology is placed ahead of the teaching, or worse yet, in place of the teacher, and the result is poor learning. Technology should enhance a learning environment, not become it.

Building dynamic engaging courses

As an online teacher, recognizing you are teaching more than your subject is helpful in the design. Teaching technology, learning skills, and time management is all part of the online learning experience and, therefore, part of the course, no matter the subject. American educator Malcolm Knowles suggests an androgynous approach in designing learner-led instruction for adult learners. Consider Knowles' 5 Assumptions of Adult Learners as a good starting point to online course design.

Think about learning from a student perspective

Educational experience is the culmination of teaching presence, cognitive presence, and social presence, according to the community of inquiry (Col) model. This tells us that presence or space matters just as much in virtual learning environments as it does in physical learning environments to foster learning.

- Know your audience.
- Be personal.
- Set clear expectations.
- Hold students accountable.
- Repeat instructions and learning objectives.
- Direct students toward learning support resources (tutoring, research help, etc.).
- Be flexible with technology and life challenges.
- Gather feedback from students—and use it to improve your course.

Making online courses places for learning requires an understanding of sound pedagogy, an understanding of how e-learning happens, and intentional design. For those dedicated to the art and science of teaching with technology, it is an ever-changing yet very fulfilling endeavor.

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Resources for Implementing Universal Design for Learning in Your Online Course

Jessica O'Brien and Jayme Linton, presenters at the Teaching Professor Technology Conference, 2016

Universal Design for Learning (UDL) is a framework designed to guide the development of learning environments to meet the needs of diverse types of learners, making learning accessible for all learners. Based on research about how people learn, UDL provides a set of design guidelines for course designers and instructors aimed at creating flexible pathways or opportunities for students to learn. Backward design, developed by Wiggins and McTighe (1998), encourages course designers to begin with the end in mind. As the first step this process prompts the designer to identify and clearly articulate learning outcomes, or what students should know or be able to do as the result of interacting with the content.

UDL guidelines are organized into three principles: multiple means of representation, multiple means of action and expression, and multiple means of engagement.

Once learning outcomes have been identified, UDL guidelines prompt designers to identify potential barriers to student learning and construct flexible paths for each student to meet those learning outcomes.

UDL guidelines are organized into three principles: multiple means of representation, multiple means of action and expression, and multiple means of engagement (Meyer, Rose, and Gordon 2014). These three principles form the foundation of course design that provides equal learning opportunities for all learners. The UDL framework, first

proposed in the 1990s and more recently applied to online environments, offers nine guidelines along with indicators to assist designers in providing multiple opportunities for representation, expression, and engagement. These principles, along with practical strategies for and examples of implementation in online courses, are presented below.

MULTIPLE MEANS OF REPRESENTATION

Multiple means of representation, the what of learning, are achieved by offering learners a variety of ways to take in information. This could include incorporating graphics or multimedia to account for the different ways students prefer to take in and then process information. Whenever possible, particularly with key content, designers and online instructors should provide content in more than one way. As an example, an announcement could be simultaneously posted in text and video, allowing learners to choose how to consume course content. Tools like Voki and Tellagami allow instructors to embed audio and video content into online courses quickly and easily. Infographic tools such as Piktochart, Canva, Visually, and Easelly also allow course designers to present content in multiple ways.

One innovative way to provide learners with multiple means of representation is to create a visual syllabus that presents the essential course components as an infographic. Online instructors can take this idea one step further with Thinglink by adding audio and/or video to the digital syllabus, creating an interactive

version of what has historically been presented in a text-only format. Thinglink provides an easy-to-use tool for presenting content and processes in multimedia with audio and video to support text and images. Additionally, screencasting tools like Camtasia can allow designers to create video explanations of content and processes.

MULTIPLE MEANS OF ACTION AND EXPRESSION

Multiple means of action and expression, or the how of learning, enable learners to demonstrate their learning in a variety of ways. The online classroom requires instructors to make use of technology to convey and discuss ideas, concepts, and processes. Likewise, students must be able to demonstrate their learning using technology, which affords innovative means of expression beyond traditional formats, such as essay and multiple choice assessments. Online instructors should provide learners with options for communication with the instructor and other learners in the course. Social spaces such as Google+ Communities, Voxer, and Flipgrid can allow online learners to choose how to interact with others and allow for the use of audio and video to support communication.

This UDL principle encourages instructors to design opportunities for goal setting and management of learning strategies. There are many freely available graphic organizers for supporting project planning, including FreeMind, Creately, and Bubbl.us. Some of these tools, like Popplet and Lucidchart, also allow for student collaboration. Designing collaborative learning experiences is another way to provide for action and expression, with the added benefit of helping students feel engaged and socially connected to their classmates and to the instructor. Social presence, teaching presence, and cognitive presence are essential components of quality online learning (Garrison, Anderson, and Archer 2000). In addition to Google Drive's suite of tools, GroupMe, Padlet, and Google Hangouts provide opportunities for collaboration, simultaneous editing, and real-time communication.

MULTIPLE MEANS OF ENGAGEMENT

Multiple means of engagement represent the why of learning. To provide multiple means of engagement, course designers should provide learners with options for recruiting interest and sustaining effort, persistence, and self-regulation. Courses that employ multiple means of engagement make room for individual autonomy and choice, provide opportunities for collaboration, and offer structures and processes for students to regulate their own learning.

One way to implement this guideline in an online course is to provide choices for how students engage in asynchronous discussion. Rather than requiring all students to participate in a text-based discussion board, students could choose to engage with their peers via video- or audio-based discussions. Web tools and apps like Flipgrid and Voxer allow online learners flexibility with when, where, and how to participate in asynchronous discussions.

To help students regulate their own learning and sustain their efforts, online instructors can provide tools to help students track their own progress toward course learning outcomes. Within the Canvas learning management system, for example, instructors can use rubrics to connect course outcomes to assignments. Students can use those rubrics to self-assess their work, and instructors can provide feedback aligned with specific learning outcomes.

These are some examples of UDL principles from online courses:

- ✔ Video announcement
- ✔ Infographic to describe a process
- ✔ Infographic syllabus
- ✔ Interactive syllabus with video
- ✔ Interactive lecture created with Thinglink
- ✔ Video of infographic syllabus
- ✔ Padlet asynchronous discussion
- ✔ Flipgrid video-based asynchronous discussion

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Enhancing Online Communication Using Multiple Levels of Rich Media and Synchronous Technologies

Evie Oregon, presenter at the Teaching Professor Technology Conference, 2016

When I initially created the 100 percent online Master of Science in Recreation and Sport Administration with a concentration in Intercollegiate Athletic Administration (IAA), I worked with other faculty and staff to determine the best methods in which to provide courses that afforded students a sense of community learning. One of the things I found early on in my research into how online courses were currently developed was that many instructors would take traditional learning methods (i.e., recording lectures, lecture slides, discussion boards) and conveniently transfer them into online versions, relying completely on asynchronous communication technologies. Very little time was spent actually evaluating whether the methods of communication used in online courses were appropriate to the message that was meant to be communicated. The use of less rich, asynchronous media can hinder student/student or student/instructor interaction and cause increased alienation and lack of ownership in the learning process, so I was determined to build the courses for the IAA program to be centered around rich, synchronous technology.

Media richness theory (MRT) describes how and why particular media are selected to deliver a message. In MRT, richness is operationalized in terms of a medium's ability to accomplish four goals: sending multiple cues, supporting language variety, providing immediate feedback, and allowing personal nature to be communicated. MRT states that the purpose of communication is to reduce uncertainty, which is associated with a lack of information, and equivocality, to promote communication efficiency.

The basis of this widely accepted theory is to communicate effectively; media must be chosen to reduce ambiguity and the distortion of received messages. While ambiguity is inherent within the information being sent, equivocality will increase should the mode of communication be incorrect for the message being sent. Trevino, Lengel, and Daft found that, while synchronous communication media provide high levels of richness and minimal uncertainty in the messages contained, asynchronous communication provides higher levels of ambiguity and is less rich in quality.

MRT argues that synchronous forms of communication delivery are richer than those that are asynchronous. Newberry, a prominent MRT researcher, identified seven types of communication media and rated the ability of each to carry feedback, multiple cues such as body language, message tailoring, and emotions. In other words, to communicate effectively to our students in online courses/programs, we as instructors must choose a medium (technology) that's highly rich to reduce ambiguity and eliminate the chance for message confusion. Online instructors should explore implementing mandatory synchronous communication sessions of instruction into online courses. Easier said than done, huh? I mean, the very essence of online learning for our programs is that they are flexible for the students and will not impede their lives.

Using MRT to evaluate and examine media in educational settings can play a significant role in implementing and further developing online courses and programs. Researchers have found that determining the appropriate tools to use as a means of reducing uncertainty and increasing understanding of messages being sent can not only help offset practical problems experienced by distance learners and instructors but also create realism of online learning experiences while developing social infrastructures that support online communities. See Table 1 below.

Table 1: Media Criteria and MRT Rating

	High	Medium	Low
Feedback	Face-to-Face Videoconferencing Audio Chats Text-Based Chat		E-mail Discussion Boards Asynchronous Audio
Multiple Cues	Face-to-Face	Videoconferencing	Synchronous & Asynchronous Audio- Text-Based Chat E-mail Discussion Boards
Message Tailoring	Face-to-Face	Videoconferencing Synchronous Audio E-mail	Text-Based Chats Asynchronous Audio Discussion Boards
Emotions	Face-to-Face	Videoconferencing Synchronous & Asynchronous Audio Asynchronous Video	Text-Based Chats E-mail Discussion Boards

Ultimately, as online instructors, our communication media choices should be directed by the desired learning outcomes in the course. In choosing the best medium for conveying course materials, we can carefully incorporate different technologies into course design as a means of reducing message ambiguity and distortion. In essence, the more a mode of communication is media rich and fitting of the message to be sent and received, the more likely that ambiguity and equivocality can be avoided, thus enhancing the overall online learning environment.

Table 2 on page 26 gives some examples of media used and desired outcomes and explains the levels of media richness.

Table 2: Levels of Media Richness

Media Used	Assignment/Desired Outcome	Level of Media Richness
Initial Synchronous Communication Meeting, Videoconferencing (Adobe Connect, Skype)	Students were required to set up a 10-minute synchronous communication meeting with the instructor within the first two weeks.	<i>Medium/High</i> Instantaneous feedback and reproduction of visual cues and emotions. Allows message tailoring.
Discussion Boards (Blackboard)	Discuss current events in inter-collegiate athletics, governance, compliance, and student athlete development. Students will be able to post comments and reply to others' posts regarding material covered in class and current events.	<i>Low</i> Delayed or no feedback. No visual cues or emotions. Does not allow message tailoring.
Video Lectures	Set up administration sites and create online posts; students will be able to see/hear instructor covering new material, use the technologies, and receive step-by-step instructions on each course module.	<i>Medium</i> No feedback. Allows for visual cues, reproduction of emotion, and message tailoring.
Video Discussion Board Post	Students create a recorded video of a current event; students will be able to see/hear each other and create a better sense of face-to-face communication.	<i>Medium/High</i> Instantaneous feedback and reproduction of visual cues and emotions. Allows message tailoring.
Video Grade Feedback	Instructor is able to point out specific examples in the assignments while providing verbal and nonverbal cues through the video.	<i>Medium</i> No feedback. Allows for visual cues, reproduction of emotion, and tailoring.

As with any pedagogical strategy, various factors beyond the selected media can either enhance or impede student learning, such as teachers' skills and appropriate student support for new technologies. It is important that the student, instructors, and support staff all work together to provide a vast network of support to make the course and program succeed while using rich media.

The logo for the Magna Teaching With Technology Conference 2017. It features the letters 'MT' in blue and green above 'WT' in orange and yellow. To the right, the text 'Magna Teaching With Technology Conference 2017' is written in white. The background is a blue-tinted image of people in a classroom setting.

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