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TIPS FROM THE PROS

Lessons Learned from the World's Best MOOC

By John Orlando

MOOCs are badly misunderstood within higher education. Reports focus on their low completion rates as a sign of failure, but to do so uses the wrong rubric. Students are not taking these classes to fulfill degree requirements, but simply for the knowledge they offer; they pick those topics within any course that appeal to them, like reading a newspaper. Judging a MOOC by completion rates is like judging the *New York Times* by how many people read every single article.

In reality, MOOCs constitute the full development of the web as a teaching medium. Previously, online courses were translations of face-to-face courses. In contrast, MOOCs were designed from scratch for the web, so they dispensed with the baggage of face-to-face course assumptions to make maximum use of the web as a medium.

Learning How to Learn, developed and taught by Barbara Oakley and Terrence Sejnowski, through the University of California, San Diego, and hosted on Coursera, is one of the most popular MOOCs of all time. With over one million participants from over 200

countries, the course has drawn widespread praise from students and instructors alike (Oakley, 2016), and the teaching devices it uses provide insight into creating highly effective online courses.

“Importantly, the videos include not only the speaker but also images interspersed to illustrate and amplify the points made.”

Content

Like nearly all the best MOOCs, Learning How to Learn uses green screen videos of the instructor speaking to the students as the primary means of delivering content. These are ideal for communicating in a web medium because a face and voice grab our attention. While they might sound daunting, they were actually quite simple to produce. The videos were made in the basement of one of the instructors following the installation of a

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Get the Most Out of Online Discussion

By Meixun Sinky Zheng, PhD

Online discussion forums can produce livelier and deeper debate than is possible in face-to-face courses, but instructors are often challenged in reaching this goal. Two of the most frequently asked faculty questions concern (1) how to get students to participate in the discussion and (2) how to prevent the discussion from remaining at the superficial level. A few simple design strategies will help create effective discussions in your online courses.

Ask discussion questions that provoke higher-level thinking.

If you ask questions that require students to recall factual information, idea exchange is unlikely to occur, because there is nothing to be “discussed.” However, if you ask “why” and “how” questions, it is more likely that students will engage in higher-level idea exchanges.

Use a variety of discussion formats. If you teach a large class, you might want to use small groups to help you manage the

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Role-Playing for Improved Online Discussion

By John Orlando

Despite a faculty member's best efforts, online discussions often degenerate into students simply taking turns answering the original question rather than genuinely speaking to one another. One problem is that many students feel that it is not their place to criticize peers. This might be the result of the emphasis on inclusion in K-12 education, which is admirable, but could also be making students hesitant to challenge each other's ideas.

Yu-Hui Ching and Yu-Chang Hsu of Boise State University addressed this problem by crafting online discussion as a role-playing activity, with students commenting within an assigned role. They found that this twist significantly improved the level of students' engagement with peers (2016). They required students in an instructional design course to tackle a problem by analyzing the situation and posting a solution as an audio or video VoiceThread. Their peers then commented on the presentations using the VoiceThread commenting feature within an assigned "stakeholder" role in the instructional design process. Unfortunately, the authors never defined these roles, but one could surmise that they would include the course developer creating class material, the teacher planning to teach the course, or a student taking the course.

Researchers found that students providing commentary within a role were more likely to critique a peer's work by identifying problems, asking questions, or suggesting solutions. Students were engaging with other students in ways not seen when they were not in specific roles.

When surveyed, students provided a number of reasons why they were more likely to engage with their peers. One was that they were more confident in their commentary when they delivered it within roles.

Additionally, both the sender and receiver felt more psychological safety discussing issues within roles. It is curious that even the receiver felt more psychological safety, since the person posting the activity was not acting in a role. Apparently, the fact that the

“Faculty can add a second layer of discussion by asking students to critique each other’s performances in their roles at the end of the activity.”

criticism the student received came from a role made it more palatable to the receiver.

Role-playing can be an effective learning device in any online course. Students in a business class can discuss a business proposal within assigned roles such as marketing director, CFO, HR director, and so forth. Students in a civil engineering course can be put into roles within an imaginary engineering firm given a project from a hypothetical client and asked to develop a plan, while the other students critique that plan from the standpoints of the client and other stakeholders such as members of the community,

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dynamics of the discussions. You can assign each group member a different role and rotate those roles throughout the course. You can also use student-led discussions, giving students the opportunity to take responsibility for their own learning. But in this case it is critical to model how to lead online discussions with sample postings, since leading discussions is new for most students.

Design a variety of discussion activities. Don't restrict yourself to assigning readings or videos and asking students to answer a few questions based on the material. While reading or watching and responding is a great way to assess students' understanding, eventually students will get bored with the repetition. To keep them engaged, you can introduce a variety of discussion activities, such as the "six thinking hats" (http://www.debonogroup.com/six_thinking_hats.php), debate, role-play, peer review, and so on.

Use the B-D-A framework.

The B-D-A (before-during-after) framework is a well-known model for reading comprehension instruction that can be applied to online discussion (Vacca, Vacca, & Mraz, 2016).

Before discussion

- *Communicate high expectations early and reinforce those expectations throughout the course.* If you expect students to actively contribute to discussions, make the expectations clear at the beginning of the course and remind students of them throughout the course. Additionally, remember that expectations are two-way. You should also make it clear to students what they can expect from you (e.g., how soon you

will grade their discussions and how often you will log in to the learning management system to answer their questions).

- *Provide examples of high- and low-quality discussion posts.* The high-quality examples clarify what you are looking for in students' discussions. The low-quality examples let students know what is not acceptable.
- *Start with online community building.* Spend some time during the first week building a community of online learners. For example, you can have students introduce themselves or participate in icebreaker activities.

“The B-D-A (before-during-after) framework is a well-known model for reading comprehension instruction that can be applied to online discussion.”

During discussion

- *Acknowledge good online discussion behavior.* When students engage in exemplary discussion activities such as sharing resources, connecting readings to outside concepts, citing research, or making a constructive comment on a peer's discussion post, give them public compliments. Positive reinforcement not only encourages them to keep up the great work but also sets up a model for the class to follow.
- *Encourage students to provide constructive feedback to peers.* Explain to students that constructive feedback helps extend peers' thinking. Make it clear

that empty responses such as “I agree” and “I like it” are not acceptable.

- *Encourage students to reply to peers' comments.* If students ask questions in their replies to peers' discussion posts but they never get answered, the conversations will stop. Eventually students might be discouraged from asking questions. Let students know that replying to peers' comments is valuable. When they do reply, show them your appreciation for helping to keep the conversation going. Contact students who never reply to peers privately to remind them of the requirement.
- *Participate in the discussions with students.* In the online environment, students often feel isolated from the instructor. By participating in the online discussions—replying to students' discussion posts or asking them questions, for example—you will improve your teaching presence (Garrison et al., 2010). Sometimes it might be unrealistic for you to reply to all students' discussion posts, especially if you teach a large class. In this case, you can reply to a different subgroup of students in each forum. If you teach a blended course, you can review all discussions to pick the five most important questions or issues raised by students and address them in the classroom.

After discussion

- *Summarize and synthesize the discussion to bring all pieces together.* Highlight interesting ideas to demonstrate what you want out of students.
- *Provide specific and personalized feedback to students.* When

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Feeling vs. Fact and What it Tells Us about Flipped Learning

By John Orlando

Flipped learning has become a hot topic in online education lately. The flipped classroom model moves the act of delivering information to the student in a traditional lecture outside of class in the form of a video or some other appropriate online content and moves the act of engaging with the material via homework into the classroom through some sort of in-class activity. Numerous studies have now demonstrated the superiority of flipped teaching to face-to-face instruction, especially in STEM classes. In fact, flipped classes were found to improve student learning by an average of 6 percent in these studies (Van Sickle, 2015).

But an interesting new study shows that student *perceptions* of the quality of instruction drop with flipped teaching. When asked questions such as “Overall, the instructor effectively facilitated my learning” and “Overall, I rate the course as excellent” on end-of-course surveys, a group of students rated flipped teaching lower than face-to-face teaching, all while exam scores rose in those very same courses (Van Sickle, 2016).

There are a number of possible explanations for this disconnect between student perception and reality that suggest ways in which the instructor can better manage student expectations in a flipped classroom.

Classroom experience: The study in question examined an algebra course, which is significant, because problem-heavy math courses are ideal for flipped learning. When students do their problem sets at home in a traditional math course and get stuck, they have no one to go to for help, and so they do not learn the

correct procedure. If the homework session is put into the classroom, those students facing difficulties can get immediate help from the teacher.

But this also means that the difficult part of the course is moved from outside the classroom to its inside. Students tend to associate the face-to-face sessions with the class itself, so they start associating their negative feelings of frustration with the course itself.

“Years of experience in traditional education have taught the student to equate the course with the classroom.”

The problem is that years of experience in traditional education have taught students to equate the course with the classroom. This might explain why students often liken the flipped classroom to “teaching themselves.” They assume that teaching must happen within the walls of the classroom, so if the content is presented outside of those walls, they must be teaching themselves.

But this is the wrong way to look at it. The student is no more “teaching themselves” from a video made by the teacher than from a live lecture delivered by the teacher. Both are educational content produced for the course. The “course” is not the classroom but rather everything related to the learning experience, including readings, homework, videos, and so forth. Whether the content is delivered inside of the classroom as a lecture or outside of the classroom as a video makes no difference to

the fact that it is all part of the learning experience.

Instructors need to be cognizant of the fact that they are opposing deeply ingrained views of teaching among students by using the flipped classroom model and so should take time at the beginning of the course to explain their reasons for flipping the class and how it will benefit the students. The teacher should explain that flipping the classroom has been shown to increase learning and improve grades. The teacher should also point out that there is nothing inherently sacred about the live lecture. The live lecture was developed when higher education was born in the Middle Ages because face-to-face communication was the only means of communicating to an audience at the time. The lecture is simply a product of the limits in technology at the advent of higher education. The live lecture is no more intrinsically connected to teaching over video content than a land line is intrinsically connected to communication over a cell phone. That analogy should help break students of the “seat time” view of teaching as something that must happen within the walls of the classroom.

Attitudes toward the teacher: Another explanation for negative student attitudes toward flipped learning is that interacting with the instructor in a classroom helps develop a positive association with the teacher. This is why business-people seeking to sign an important client always want to speak with the client face-to-face rather than by phone or some other medium. They understand that we build rapport via face-to-face experiences.

But isn’t the instructor interacting with students in a

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flipped classroom and, in fact, interacting more by providing one-on-one teaching? Researchers have theorized that some students may not make use of this opportunity for interaction either because they do not need it or because they are too shy to call the teacher over. This means that the only real interaction with the instructor for these students was online, outside of the classroom, and that content did not facilitate the development of rapport with students.

Faculty members can address this problem in two ways. One is to humanize their online content by delivering it in a format such as green screen video, discussed elsewhere in this newsletter. A second way to ensure student engagement in the live session is through in-class activities that require the involvement of all students, such as in-class polling. These feedback activities can quiz students on their knowledge or ask how many students are still having trouble with the concept. These activities allow all students to be active in the live session, not just those students who are having problems.

Mistakes are public: The last explanation given is that students'

mistakes on homework problems in the traditional class are made in private in the dorm room or library, whereas those made in the flipped classroom are done in public in the live session. The public exposure to error causes embarrassment and damage to self-esteem for many students. These students would rather work on problems in a solitary environment, so they are hesitant to participate or ask for help in the flipped classroom.

Many teachers forget that public appearances play a part in how students act during class. They ask simple faculty questions in a live session and wonder why they do not get an answer, or they chalk up the silence to student apathy. In reality, though, many students do not want to risk answering incorrectly in front of others.

Faculty members need to find a way to make students feel comfortable asking for help or admitting to confusion in front of others. This is not easy. We try to alleviate student anxiety with sayings such as "The only dumb question is the one that does not get asked," but this can come off as a platitude.

I have had some success using a line that I heard from a coach talking to his players before a game. He told them to play hard and not be afraid of making

mistakes because "Your mistakes are my fault; your lack of effort is your fault." This struck me as a wonderful way of characterizing the teaching relationship to a student. It tells the student that it is my job to teach you, and if you do not understand something, then I didn't do my job and I need to explain it to you differently. But you need to tell me that you do not understand. I can't read your mind, so don't be afraid to tell me that you don't understand. That alleviates much of student anxiety about professing ignorance in class.

This study demonstrates that while flipped learning has proven to be effective, students need to be prepared for a method of teaching that is very different from what they are used to, so a fundamental part of any flipped class needs to be influencing students' mindsets at the very beginning.

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users, and the like. I sometimes give cases to students in my medical ethics course and assign them roles to discuss those cases, such as a patient with a terminal illness, family members, social workers, and members of a care team.

Faculty can add a second layer of discussion by asking students to critique each other's performances in their roles at the end of the activity. Perhaps a student playing the part

of a care team member in a medical ethics discussion might suggest that the family members would have brought up a variety of objections to the care team's recommendations. Perhaps a student in the civil engineering activity might suggest that the client would have questioned the cost of the plan more than was actually done.

Faculty who are finding their online discussions lacking should try reformulating their discussions as role-playing activities to provide

the psychological safety needed to get students to genuinely engage one another on the issues.

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backdrop and some lights. They required no more than a cheap green screen, ordinary lights, a microphone, a camera, and someone with basic video-editing knowledge.

Importantly, the videos include not only the speaker but also images interspersed to illustrate and amplify the points made. When the instructor discusses how the mind connects ideas during “diffused” thinking, an image appears next to her of a pegboard with lines connecting the pegs. This represents how we connect concepts together in our brains during this mode of thinking, and it helps the viewer visualize what the instructor is saying to better grasp the concept.

The instructors also added movement to the videos to keep the viewers’ attention. All too often, I see faculty members standing perfectly still when shooting webcam videos of themselves, but viewers rapidly lose interest in a talking head. All it took was for these instructors to occasionally turn to one side or the other while speaking to add movement without detracting from the message. Another powerful device was shooting each segment twice: once in a full-body view and once from the waist up. This allowed the videos to switch between the two perspectives, which further maintains the audience’s attention.

Green screen videos can easily be created with equipment available at any institution and the skills of the average instructional designer. See the article on “green screening” in the June 2016 issue of *Online Classroom Newsletter* to learn how to shoot green screen videos yourself.

Communication Style

Too often instructors create online course content within the mindset of merely “covering material.” They simply roll through

the topics without any real attempt to communicate with the students. But the point of education is to produce learning, not simply to cover material, and that means always teaching with a mind toward reaching students in a way that is meaningful to them. Documentaries are perfect examples of how to engage viewers online. The movie *March of the Penguins* did not just list facts about penguins. It told a story that engaged the viewers, and as a result, everyone left the theater with a deep understanding of the life of penguins.

"The instructors in this course force reflection by including frequent pauses during the videos to ask questions of viewers."

Learning How to Learn demonstrates this principle of communicating over just covering content. The course is about the topic of how we learn, and it dives into deep neurological principles of learning to explain it. But it covers those principles in a way that is meaningful to the viewers. One video begins with the instructor’s talking about the experience of not being able to figure something out. The instructor continues that we might just keep pounding at it in frustration, which she likens to a zombie pounding its head against a wall. We have all experienced this frustration. She then tells us that this is the wrong way to do it and that there is a better and less painful way to do it.

This opening demonstrates the importance of starting any communication by getting the

audience’s attention. Just as all TED Talks begin with something to grab the viewers’ attention, the instructors in this course begin each topic by connecting it with the viewers’ experiences. This makes the viewer interested in the subject and invested in what comes next. Also notice how the instructor is not afraid to use humor to keep her audience’s attention. Even if a joke elicits a groan, the viewer appreciates mere fact that the speaker is making the effort to communicate.

Finally, the instructor always demonstrates genuine interest and excitement in her topic by her tone and expression. She smiles, emphasizes her points with cheer, and generally conveys the impression that she wants to help improve the lives of her viewers. Too often, academic videos feature speakers with blank expressions that only demonstrate disinterest to the viewers—a readily visible example of the “covering content” mentality that suggests nothing so much as the instructor’s punching a clock without any real interest in reaching the students. In contrast, the instructors in this course act like they are speaking to friends, and in fact, students have indicated in their post-course surveys that they come to see the instructors as friends.

Quizzes and Questions

The working memory that we use on immediate tasks can retain up to only four discrete items before it fills up and starts losing items. This means that learning requires periodic pauses for reflection for the brain to move information to long-term memory. The instructors in this course force reflection by including frequent pauses during the videos to ask questions of viewers. The questions sometimes require simple recall and at other

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times application of the concepts: students might be asked, for example, which of the activities in a given list best represents diffuse thinking. Each break helps viewers move the recent information from their working memories to their long-term memories, leading to better retention.

There are also short multiple-choice quizzes at the end of each module on the same information that was covered in the video questions. This is done because learning is best achieved by spacing out study of a subject over time rather than cramming it into one session. Too often, we assess students on content and then move on to the next topic. But the best learning occurs when we return to prior topics, because that forces us to draw up information from our long-term memories, which helps harden it in those memories. Many times, too, we don't really "get it" until we have thought about something for the fifth or sixth time, so returning to past content repeatedly improves understanding as well as retention.

Bonus Material

Another of the course's important teaching devices is bonus material in the form of interviews with outside experts. While faculty members often add "optional resources" to their courses to help students, these resources are often just more academic articles that students are unlikely to read out of interest. Our students are not like us in that they do not read academic articles for pleasure. If you want students to take up optional content, it needs to be in a format that will attract them, and in this course, that format is engaging video interviews or stories on practical topics that provide real-life application of the course concepts. The instructors also included videos simply for their humorous connection to the material, such as an article on Chinese high school students studying with intravenous tubes in their arms. This content helps create an atmosphere of inquiry for its own sake, rather than for a grade.

Note also the label "bonus material" rather than "optional material." The former implies that the students are getting something

for free, while the latter implies that the material is not important to their grades. The label itself will influence how students think of the material and whether they will engage with it.

It is easy to find engaging videos, articles, or other material related to course topics on YouTube or in newspapers, among many other sources. Save the links to interesting material that you come across and post those in your course. Invite your students to post content that they find as well to create a community dedicated to mutual exploration of the topics.

Take a look at MOOCs such as Learning How to Learn to pick up effective teaching techniques to apply to your own courses.

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Oakley, B., Poole, D., and Nester, M. "Creating a Sticky MOOC." *Online Learning* 20, no. 1 (2016). @

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grading students' discussions, always add comments on what they have done well and how they can improve next time.

Dr. Zheng will be presenting a Magna Online Seminar entitled Facilitate Online Discussions to Support Student Engagement and Knowledge Co-construction on September 13, 2016 at 1:00 p.m. (Central). For more information, please visit <http://www.magnapubs.com/online-seminars/live>.

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NEXT MONTH'S TOPICS

Which Gamification Features Best Engage Students

How to Avoid Automating Your Online Teaching

Applying Neurology to Online Videos

Curt Bonk Talks about Open Education

Five Steps for Real-Time Online Group Projects

Use Quizzes to Add Competition to Your Online Class

By John Orlando

It is unfortunate that faculty members often deliberately avoid creating competition in their courses out of fear of damaging student self-esteem or privacy considerations. Competition is one of the best ways to achieve growth. We invariably perform better when we are striving to achieve in a competition. I once performed a maximum heart rate test on a stationary bike, and afterward, the tester added 10 beats per minute to the results to obtain my true maximum, on the grounds that people always achieve a higher heart rate during competition than they are capable of achieving on their own.

Competition can be added to an online course without violating student privacy and harming self-esteem through ungraded quizzes with leaderboards. Faculty often assume that students will not take seriously any activities that do not directly affect their grades, but the competition created by a simple leaderboard is sufficient for creating engagement in an activity without the stick of a grade. Providing multiple attempts at the quizzes also allows for failure without cost, a fundamental attraction of games that has been proven to be a powerful driver of learning (NYU, 2013). Whereas students are made anxious by a bad grade and will fixate on how to get the teacher to improve it, those same students will focus on how to improve through performance to move up a leaderboard that does not have a grading implication.

Instead of individual leaderboards, the faculty member might also put students into groups and publicize the group scores: students are motivated to benefit the group as a whole, but do not see their own scores publicized. Many companies

use this motivational device to encourage employee health through “Biggest Loser”-style competitions whereby employees are put into groups and group weight loss is used to determine leaderboards.

There are a number of simple and free online quizzing systems that come with leaderboard capabilities. All of the systems provide students with immediate feedback on their performances, and they provide the teacher with both individual student’s performances and a class dashboard. Here are some of my favorite options.

Quizlet (<http://quizlet.com>) is a good system for creating a variety of quiz questions, from flashcards that provide a term or an audio or video snippet that the student needs to match to a definition, to fill-in-the-blank, matching, multiple-choice, and true-false questions. The quiz can also be set to require students to retake all of the questions they got wrong over and over until they get them right. Thus, success is guaranteed with sufficient effort.

There is also a version that allows for competition between students. The Gravity game requires the student to fill in a blank based on a question written on a virtual asteroid falling toward a virtual planet. The student must submit the correct answer before the asteroid makes impact in order to get credit. Once the student gets all of the questions right, he or she advances to the next planet. The teacher can set up a leaderboard that tracks each student’s level of achievement.

Quizlet also recently launched a Quizlet Live version of the game designed to be played in real time. An instructor could use it to add a quiz to the in-class portion of a flipped class or during a live session in an online class.

Quizalize (<http://www.quizalize.com>) is similar to Quizlet in that it allows students to take quizzes with team leaderboards. It allows for only multiple-choice questions, but features an area for the teacher to explain why certain answers are right or wrong after the student submits them. The teacher can also set a time limit for an added bit of interest.

Quizizz (<http://quizizz.com>) has the advantage over Quizalize and Quizlet in that it allows students to see an individual leaderboard rather than a group leaderboard. It also allows students to create avatars for themselves and permits teachers to provide image memes as feedback.

Google Forms is a powerful Google Drive application that can be used for several purposes, including hosting quizzes. Questions can address various types of content and quizzes can be formulated in a number of ways to control time, order of questions, and so forth. See the tutorial at <https://youtu.be/2q2joyj1ziM>.

Forms does not feature a built-in leaderboard system, but you can develop a leaderboard manually using Flubaroo, a Drive add-on that compiles submissions of a Form and grades them. The results are posted on a Drive spreadsheet that can be made public. Take a look at how Flubaroo works at https://youtu.be/U06W3H_iDho.

Consider adding some healthy competition to your course to improve learning and student engagement.

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