The Flipped Classroom: Tips for Integrating Moments of Reflection

By Berbi Honycutt, PhD and Sarah Egan Warren

"Students in inverted classrooms need to have more space to reflect on their learning activities so that they can make necessary connections to course content" (Strayer, 2012).

If you were to observe a flipped classroom, what do you think would it look like? Maybe students are working in groups. Maybe each group is working on a different problem. Maybe the instructor is walking around the room talking with each group and checking on the students’ progress. And each group of students is probably asking a different question each time the instructor walks by. It’s probably noisy since everyone is talking to each other or engaged in a task. And students are probably standing up or leaning in towards one another to hear their group members talk about the next task. Students might be writing in a workbook, typing on their laptops, or watching a video on the screen of some new technological device.

The flipped classroom is a busy, collaborative, and social place. We could say it’s a place where extroversion, collaboration, and teamwork are highly valued.

But what does this mean for students who don’t excel in this collaborative space? What does it mean if we’re always focused on the doing?

In the flipped classroom, the instructor’s challenge is to design learning experiences that engage students in higher level thinking and problem solving during the class time. It’s about creating, evaluating, synthesizing, and analyzing together.

But, are we missing a whole segment of our student population and minimizing the importance of reflective engagement in favor of active engagement by only defining the flip in terms of collaborative learning?

Other scholars have explored these questions from different perspectives, all in an effort to learn more about how to increase student success, engagement, and learning. Felder and Silverman (1988) addressed it in their work with learning styles and learning preferences. Bonwell and Sutherland (1998) discussed it in their model based on the active learning continuum. Chesbrough (1999) examined it in the context of the Myers-Briggs Personality Inventory (MBTI). And more recently, Monahan (2013) addressed it her Faculty Focus article titled, "Keeping Introverts in Mind in Your Active Learning Classroom." Monahan has certainly touched on a topic of high interest to the Faculty Focus community, which prompted us to think about how this relates to the flipped classroom. When we submitted this article for publication, Monahan’s article had 132 tweets, 228 likes on Facebook, and 64 shares and pins through LinkedIn, Pinterest, and Google+.

Those are impressive numbers for our community. It seems many of us are looking for ways to ensure all of our students are successful and feel valued in our classrooms.

There are numerous inventories and assessments for identifying how students’ personalities, learning styles, and intelligences can inform the design of learning experiences. No matter your stance on these assessments, most of us are familiar with the language of extrovert and introvert. The MBTI, The Big Five, and the Strong-Campbell Interest Inventory all use this common vocabulary of extroversion and introversion. The vocabulary is the basis for the New York Times bestseller, Quiet: The Power of Introverts in a World that Can’t Stop Talking, and there are more than 1,200 books on Amazon dedicated to the introvert/extrovert
The introvert/extrovert is a powerful way to think about the design of our learning environments.

So what does this mean for the flipped class?
Many flipped learning strategies seem to favor the extrovert (leading a class discussion, brainstorming as a group, engaging in small group conversations, playing games, creating models, recording a video, solving problems, etc.). All of these strategies require interacting, socializing, and working collaboratively. While extroverts may thrive in these situations, drawbacks exist. As Cain (2012) explains, "The New Groupthink elevates teamwork above all else. It insists that creativity and intellectual achievement come from a gregarious place. It has many powerful advocates" (p. 76). However, are we missing valuable contributions from students who don't speak up or thrive in these highly interactive situations? Cain (2012) continues, "Introverts prefer to work independently, and solitude can be a catalyst to innovation" (p. 74). Some of the best ideas may come from a student who worked on a creative task by himself/herself but didn't share it with his/her group. If we never give the students an opportunity to reflect or work individually in the flipped space, then we're doing a disservice to both introverts and extroverts. All students benefit from reflection, not just introverts. Reflection allows students time to pause, think, make connections, and work through an idea before others have any input or criticism.

If we refer back to the opening quote from Strayer (2012), the question we should be asking ourselves is, "How do we create the reflective space in the flipped learning environment?" Asking the question in this way puts this emphasis on the reflection, and reflection is a skill all learners need, especially in active learning environments and flipped classrooms. Asking the question in this way also encourages us to look carefully at how we design our time in class with our students. Simply moving all of the reflective activities outside of class time isn't addressing the needs of our students.

So, what can we do? To start the conversation, here are three strategies to integrate reflection into the flipped classroom:

1. Think, Write, Share. Similar to the popular "Think, Pair, Share" strategy many of us use in our classes, this strategy adds more time for individual work and reflection. Ask students to think about a question or problem first. After a few minutes, give students time to write, map, or draw their ideas. Then allow time for sharing in pairs, small groups, or among the whole class.

2. Writing Prompts. Begin class with a writing prompt based on the higher levels of Bloom's Taxonomy. Give students a chunk of time to create a draft, interpret a finding, analyze these two author's points of view, etc. before class begins. Alternatively, if you assigned the writing prompt for homework, then allow students time in the beginning of class to re-read it and make edits before sharing.

3. SWOT Analysis. Give each student a piece of paper (or access to a laptop or other technological tool). Ask students to conduct a SWOT analysis based on the same part of the content. A SWOT analysis is a method for identifying and analyzing the Strengths, Weaknesses, Opportunities, and Threats. You could assign students one piece of the analysis if you have limited time.

By integrating moments of reflection into the flipped classroom, we can create a learning environment that both challenges and supports all learners and ultimately allow opportunities for all students to engage in both active and reflective experiences. We're not trying to change our students' ways of interacting with the world. As Monahan said, "Our goal is not to turn introverts into extroverts, or vice versa, but to maximize learning for all students." We've shared three strategies for reflection to start the conversation. Do you have other ideas to share?
References:


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The Flipped Approach to a Learner-Centered Class

This paper is based on a February 13, 2013, Magna Online Seminar of the same title. The seminar was cosponsored by Magna Publications and The Teaching Professor, and it was presented by Barbi Honeycutt, PhD. Dr. Honeycutt is the director of graduate professional development and teaching programs at North Carolina State University, where she is also an adjunct assistant professor in the Department of Leadership, Policy and Adult and Higher Education. She is also the founder of Flip It Consulting where she teaches educators, instructors, and trainers how create effective classes, training sessions, and meetings using the flipped approach.

Edited by Barbi Honeycutt, Ph.D. & Jennifer Garrett

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ABOUT THIS WHITE PAPER

This white paper is based on a seminar cosponsored by Magna Publications and *The Teaching Professor*. It was originally delivered by Dr. Barbi Honeycutt on February 13, 2013.

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# Table of Contents

Preface: Three Questions .............................................................................................................. 5
1. Learning Outcomes .................................................................................................................. 7
2. Flipping a Lesson .................................................................................................................... 9
3. A Sample Course: “Current Issues in Technology” .............................................................. 11
5. The Reveal .................................................................................................................................. 18

**Appendix A: Questions & Answers** ......................................................................................... 19
  How can an instructor determine whether it is possible to flip a course? ............................... 19
  How do you measure performance and results? ........................................................................ 20
  How do you flip a class of 100 students when the class is based heavily on lecture? .......... 21
  How does an instructor plan for students who are not prepared? ......................................... 22
  How do you flip an online classroom when synchronous meetings are not required? .......... 23
  Would a flipped class work in a liberal arts classroom as well? ............................................. 24

Miscellaneous Q&A ..................................................................................................................... 25

**Appendix B: Getting Started with a Flipped Lesson Plan** ..................................................... 29
**Appendix C: Getting Started with a Flipped Lesson Plan—The Reveal** .................................. 31
**Appendix D: Five Ways to Focus Your Participants’ Attention** ............................................. 33
**Appendix E: Brainstorming the FLIP** .................................................................................... 35
**Appendix F: Brainstorming the FLIP—Computer Mouse Example** ...................................... 36
**Appendix G: The Reveal for the Whole Workshop** ................................................................. 37
**Appendix H: The “So What, Now What” Question** ............................................................... 38
**Appendix I: Skills Assessment Worksheet** ............................................................................ 40
**Appendix J: Resources** .......................................................................................................... 41
PREFACE: THREE QUESTIONS

Many educators have heard about flipped classrooms by now. One of the most common models of flipped classrooms involves reversing the traditional lecture and homework activities. In this model, students watch a video of a lecture before class and then spend time during class completing the homework assignment. That is definitely one way to flip, but it is not the only way. There are numerous flipped methods and strategies to enhance the educational experience and increase learners’ involvement and engagement.

This white paper is based on the flipped webinar presented on February 13, 2013. The webinar was flipped using this model since it is the most familiar flipped design being discussed, and it allowed for a starting point as participants explored alternative models and definitions. Participants watched a two minute video prior to the webinar which explained the four parts to a flipped lesson plan and provided an introduction to flipping Bloom’s Taxonomy. Then participants completed a quiz in real-time at the beginning of the webinar which represented the “class” time. The remainder of the webinar focused on creating an example lesson which allowed participants to collaboratively design a flipped lesson plan from beginning to end. Throughout the webinar, participants used a flipped lesson planning worksheet and contributed a variety of flipped strategies in an effort to expand the definition of what it means to flip a lesson.

Since this is a white paper and not an actual course or webinar, readers cannot watch a video prior to engaging with the content. We will skip straight to the quiz questions, and then the rest of this report will expand on these three questions as readers explore different models and approaches for what it means to flip a classroom.

The original version of Bloom’s Taxonomy was used for this webinar. This image compares the lecture-centered environment to the flipped environment in terms of how class time is spent.
Question 1: What are the four parts of a flipped lesson plan?
The four parts of a flipped lesson plan are (1) purpose, (2) prior-to-class activities, (3) in-class activities, and (4) closing.

When integrating flipped approaches in the classroom, it is critical to begin with a purpose for the lesson since all of the prior-to-class and in-class activities are designed to support that purpose. Many instructors spend most of their time planning the information they will cover in a lecture and deciding how much students need to prepare prior to coming to class. Less time is spent developing how the students will actually achieve the learning outcomes during the class time. In a flipped learning environment, it is essential to connect the outcomes to all of the prior-to-class and in-class activities to ensure a seamless learning experience. Then the closing becomes both the end of one class and the beginning of the next.

The four parts of a flipped lesson plan are:
(1) purpose,
(2) prior-to-class activities,
(3) in-class activities, and
(4) closing.

Question 2: What is the lowest level of Bloom’s Taxonomy?
Knowledge is the lowest level of the original Bloom’s Taxonomy. Knowledge-level learning outcomes address the basic or fundamental levels of thinking or knowing. The word cues associated with this level of learning include list, define, recall, and memorize. In the flipped class, these are the learning outcomes you want students to achieve outside of class.

Question 3: Which level of learning outcomes should we focus on in the flipped class?
In a flipped class, instructors should focus on the higher level learning outcomes located at the top of the Bloom’s Taxonomy pyramid during class time. These learning outcomes are designed to enhance students’ critical and creative thinking skills. In contrast, lecture-centered classes usually address these learning outcomes, but they are often completed outside of class time as homework assignments, group projects, papers and projects.

When instructors focus on higher level learning outcomes during class time, then they are available to work with students as they struggle through challenging activities and assignments. Instructors become the “guide on the side” as students analyze, evaluate, or create new information. These activities require more advanced skills, and students are more successful when they engage in these activities with their instructor who now serves as a resource or guide rather than the “sage on the stage” delivering a lecture. In the flipped model, students learn from the instructors’ expertise and experience in practice, which allows them to see how scholars address challenges in their field.
1. LEARNING OUTCOMES

The three learning outcomes for this white paper are (1) to expand the definition of what it means to flip a learning environment, (2) to actually analyze a flipped lesson plan, and (3) to identify the skills needed to implement flipped strategies, to ensure the flipped classroom is successful. This third outcome is critical. A flipped lesson plan or course will be ineffective if the instructor lacks the skills or characteristics for successful implementation. Additional professional development may be needed to make a flipped classroom a positive experience for both the students and the instructor.

EXPANDING THE DEFINITION OF A FLIPPED LEARNING ENVIRONMENT

The term *flipped classroom* has become a hot topic in higher education. Ideas about and opinions about flipped learning environments vary. Some consider it simply another way of talking about student-centered learning. Others view flipped classrooms as the most cutting-edge approach to learning. Still others see flipping as just another fad that will eventually run its course.

The most widely used description of the flipped class is a learning environment in which the activities traditionally completed outside of class as homework are now completed in class during instruction time. And, the activities traditionally completed in class are now completed on students’ own time before class. In many definitions and models, this means students watch a video of prerecorded lectures before class. Then, when they arrive to class, they work through assignments or activities with their peers and the instructor.

While that is probably the most familiar idea of the flipped classroom, flipping can mean more than watching videos of lectures. After all, a video of a lecture is still a lecture. One of the essential goals of the flipped classroom is to move beyond the lecture as the primary way to deliver information and structure class time. A well-developed lecture can be effective, but instructors rely on it too heavily and often to the exclusion of other more meaningful teaching and learning strategies. A flipped classroom allows instructors to introduce new ways of doing things. Yet adding something new generally requires letting go of something old. In the flipped classroom, instructors need to let go of their reliance on the lecture and focus on other ways to enhance learning by introducing active learning strategies that put students in the center of the learning experience.

There are other ways to define the flip. It can be described as moving from an instructor-centered learning environment to a student-centered learning environment. It could also be defined as shifting from individual to collaborative strategies. Although, it is possible to flip a class using individual activities such as quizzes, worksheets, reflective writing prompts, and problem solving assignments. The key is to complete these activities during class time.
Flipping may or may not include technology. Bergmann and Sams (2012) explain, “Ultimately, flipping a classroom involves shifting the energy away from the instructor and toward the students and then leveraging educational tools to enhance the learning environment.” Keep in mind that educational tools include but are not limited to technology. While videos and other technological tools can be effective in a flipped classroom, they are not required. The true essence of the flip is really to focus on the student.

Bloom’s Taxonomy provides the framework for comparing the lecture-centered class to the flipped class. Instructors focus on higher level learning outcomes during class time and lower level outcomes outside of class. This means the flip could be as simple as watching a video before class and then attending class for more in-depth discussions that involve judging, analyzing, and creating. If students work with the fundamental material before class, they are better prepared to apply the information and engage in higher-level discussions with their peers and the instructor.

Another way to think about the flipped classroom is to focus on involving students in the process of learning during class. Honeycutt refers to the FLIP as Focusing on your Learners by Involving them in the Process. After all, flipped classrooms really are student-centered learning environments that incorporate active learning strategies during class time. This allows students to spend time problem solving, creating, critiquing, and synthesizing in class with their peers and with their instructor. Students are more active in flipped environments which add a new level of complexity to the classroom.

Regardless of the definition or framework an instructor uses to design the flipped classroom, the end result is a dynamic learning environment. Flipped classrooms are interactive—sometimes even ‘messy’—because students are working together and solving problems rather than sitting passively listening to a lecture. Flipped classrooms are also risky. Instructors relinquish a degree of control when the energy in the classroom shifts to the students. And, some flipped strategies may work while others may not. Instructors using any flipped model need to be aware of these challenges when integrating active learning strategies into their classrooms. However, careful planning can mitigate some of these challenges. For example, starting with a flipped lesson plan helps determine the appropriate tools and most effective strategies which can help instructors maintain control of the flipped classroom and ensure learning outcomes are achieved.

Perhaps one of the best places for instructors to begin is by re-thinking their role in the classroom. Sure, there are mini-lectures that need to be presented, but the majority of class time is spent on active learning. Instructors are not simply thinking about teaching in a different way; they are doing it! They are teaching differently using new approaches, tools, and strategies, and as a result, the lesson planning process and the assessment process will also change.
When planning a flipped lesson, an instructor should begin with the question, “What do the students need to DO to achieve the learning outcome?” This change in perspective will immediately flip the focus of the lesson since the question emphasizes the efforts of the learners, not the instructor. Instructors plan learning experiences based on what the students need to do and not what he or she (the instructor) is going to talk about. The instructor may lecture, but any lectures must be designed to help students accomplish what they need to do with the information or material to achieve desired learning outcomes, not just to disseminate information.

2. FLIPPING A LESSON

Again, there are four parts to the flipped lesson plan: (1) the purpose, (2) the prior-to-class activities, (3) the in-class activities, and (4) the closing. It is important to plan learning outcomes and strategies for each part of the lesson plan to create an integrated learning experience for the students. It is not enough to simply record a lecture and put it online for students to watch. The purpose must be linked to the prior-to-class, in-class activities, and the closing. When the four parts of the flipped lesson plan are fully integrated in this way, students will recognize the learning experience as a process from beginning to end, and they will see the connections between the out-of-class activities and the active learning experiences they participate in during class.

PURPOSE

The purpose is the goal of the lesson. All activities, discussions, and assignments should be designed to help students achieve the goal. The purpose should answer this question: What should students be able to do with the course material at the end of the lesson? It is not enough to think about what students should know, define or understand. The purpose should speak to what students should be able to DO as a result of the lesson. It should be specific, measurable, and observable.

In the flipped class, the purpose should be big. It should be dynamic and challenging for students to achieve. If the lesson plan itself is well designed and executed, and students are supported throughout the process, then they will be capable of reaching, or possibly exceeding, the goal.

PRIOR-TO-CLASS ACTIVITIES

Prior-to-class activities should be connected to the purpose, and each activity should have at least one learning outcome for students to achieve before they come to class. The more specific the learning outcome, the more likely students will complete the task before they come to class. Instructors can then design in-class activities to hold students accountable for the prior-to-class work. This will also reinforce the learning outcomes and connects back to the overall purpose of the lesson.
For example, Dr. Honeycutt teaches a graduate-level course titled “Teaching in College.” In this course, she models the teaching and learning strategies she is teaching to these future faculty members. For the first assignment of the semester, Dr. Honeycutt demonstrates how important it is to be specific and to give students a task to complete before class. On the first day of class, she assigns a reading assignment. On the second day of class, she announces that she wants to determine not only if students read the assigned chapter, but how. She calls on each of the students by name and writes on the whiteboard how they completed the assignment. Students’ responses vary. Some of them skimmed the chapter. Others outlined the main points after they read it. Others read the review questions first and then searched for the answers within the chapter. Some students skipped the reading assignment completely. Each student who chose to do the prior-to-class work completed it in a different way.

This example highlights how easily simple instructions can be misinterpreted when specific details or tasks are not communicated. In this example, Dr. Honeycutt gave students the instructions to “read Chapter 1” but intentionally left the assignment open to interpretation. She did not convey how to read the chapter, why they should read it, or what they were to do (or would be doing in class) with the material. As a result, each student in the class approached the reading in a different way, and none of the students really prepared in the way the instructor had hoped.

In the flipped learning environment, the in-class activities should focus on higher-level learning outcomes.

This example shows that instructors cannot assume that assigning a prior-to-class activity, even one as simple as reading, will be interpreted or completed the same way by all students or in the way the instructor intends. This is why instructions and expectations should be clear and specific. Students need to know what they are expected to do with the material.

It is imperative that instructors define learning outcomes and learning activities prior to class so that they clearly articulate what students are supposed to do and learn. If instructors cannot articulate what students need to be able to do with the material, then they cannot convey those expectations to students. Clearly communicating the tasks and expectations allows instructors to hold students accountable for achieving the prior-to-class learning objectives. If students are unable to figure out what to do because the objectives were not clearly stated, then it will be difficult for the instructor to assess whether or not students learned what was intended. Finally, there would be no continuity between the prior-to-class activities and the in-class activities. This sacrifices a valuable connection because in-class activities help reinforce the learning process.
CLOSING
The end of class allows instructors to revisit what was learned and set the stage for what comes next. Since the end of class can serve as a link between the current class and the next one, instructors need to plan the closing effectively.

As instructors design lesson plans and develop in-class and out-of-class activities, it is helpful to refer again to Bloom's Taxonomy to ensure the closing brings all of these experiences together in ways that prepare the students for the next step. In the flipped learning environment, the in-class activities should focus on higher-level learning outcomes since class time is when instructors are available to guide students through more difficult and challenging materials. During class, students are engaging in learning experiences that allow them to evaluate, critique, judge, or create new knowledge. The end of class should be designed to ensure learning occurred and students are now prepared to move to the next chapter, unit, or lesson.

3: AN EXAMPLE COURSE: “CURRENT ISSUES IN TECHNOLOGY”

Let's use an example to walk through the process of flipping a lesson. Our example course is “Current issues in Technology” and this lesson will focus on the computer mouse.

First, start with the big goal or purpose of the lesson. Ask the question, “What do students need to be able to DO at the end of this lesson?” The purpose, similar to learning outcomes, begins with the words, “Students will be able to...”

In this case, our purpose is: Students will be able to create a new feature for the computer mouse of the future.

Notice that the purpose is big, but it is also measurable. It is not vague or unclear such as “Students will be able to talk about the computer mouse.” What kind of talk? What exactly will they talk about? What about the computer mouse is worth talking about? The purpose can be big, but it does need to be written so students clearly know what they are supposed to accomplish. In the example, students are creating new features for the computer mouse of the future.

After identifying the overall purpose of the lesson, the next step is to develop learning outcomes and connect those outcomes to activities. What do the students need to do to achieve the learning outcomes? In the computer mouse lesson, students could identify existing computer mouse designs and list the existing features of a computer mouse prior to class. To do this, students have a variety of options. They could conduct an internet search
of computer mouse designs. They could take pictures of a variety different computer mouse tools used in their local library or office space. They could diagram a mouse and identify the essential components. Instructors might provide different options for students to choose from, but sometimes it's appropriate to give them the freedom to pursue their own research strategies. Some strategies will be more successful than others. Both results can reinforce and support learning.

To hold students accountable for their prior-to-class work, instructors need to explain what students should do with the information and why it's important. In the computer mouse example, an instructor might require students to post pictures of the different computer mouse designs to a class web site. Or, maybe students post a list of existing computer mouse features to a discussion board. Then the instructor could use the information collected in the discussion board as the focusing activity during class.

Thinking about the flipped class in this way helps provide continuity between the prior-to-class and the in-class activities, and students can clearly see why their part of the assignment matters to the success of the lesson. When planning the out-of-class activities, the key is to create specific and measureable tasks that address the lower levels of Bloom's Taxonomy and save the higher levels of analysis for the time spent together during class. Using the prior-to-class assignments to prompt the in-class activities helps students recall what they have already done for the lesson and prepares them to immediately begin working. When they walk into class, they are ready to start on the lesson for the day. These strategies also validate the time and energy students invested in the before-class activity, and it reinforces the importance of completing the prior-to-class work.

When students arrive in class, it's important to have a focusing activity to direct their attention to the topic of the lesson immediately and to connect it to the prior-to-class activity. A focusing activity might be a quiz, a video, a reading assignment, a quote on the board, a demonstration, or a photo, just to name a few. Instructors can be creative with focusing activities and design learning experiences tailored to their particular discipline. For example, in a food science course, the instructor passed different cereal boxes around the room as students arrived to class. Their goal was to identify which cereals met the USDA's criteria for organic food. Students were curious about the task, and they focused on the topic immediately. They immediately began analyzing the lists of ingredients and comparing those ingredients to their notes about organic foods. From that point forward, the instructor had the students' attention and could call on them to share their observations and interpretations.
This focusing activity required students to use the information they had gathered before class. It prompted them to work with other students and to reference their own notes from the prior-to-class activity. It encouraged collaboration and reinforced the learning objectives for this particular lesson. And, as a bonus, it also provided the perfect opportunity for the instructor to call on students holding the cereal boxes so they could share their observations and participate in the discussion.

This example illustrates how well the learning objectives were planned both before and after class time. Before class, students needed to know how to define and categorize organic foods. In class, students had to apply that information to determine whether certain foods really were organic based on the ingredients listed in the cereal. Also, the in-class activity was engaging from the moment the students walked in the door.

This same approach can be applied to the computer mouse lesson plan. The in-class focusing activity should engage students immediately, focus their attention on the topic of the lesson, and relate the prior-to-class material to the in-class activity. For example, the instructor could begin by showing the students' lists of mouse features and designs collected in the discussion board.

Then, the in-class activity could include a ranking activity to prioritize the most important features of the mouse. Or, the instructor could plan a debate to determine the most needed features for computer users. Or, the students could participate in a mapping exercise to compare and contrast various kinds of mouse features. An instructor could invite an expert for a question-and-answer session. All of these are higher-level learning outcomes and the students benefit from completing these types of activities in class with their peers and with the instructor.

Now consider the alternative in a lecture-focused classroom. The instructor would probably lecture about computer mouse origination, evolution, and design. Chances are that there would be some visuals depicting different mouse designs throughout history, but the emphasis would be on the lecture, how well the instructor organized the information, and how well the instructor presented the information. There probably would not be any engagement or interactivity. In the flipped classroom, the students generate most of the discussion material during class while they create, analyze, and synthesize. They organize the information, and they apply the content for themselves. In the lecture-focused classroom, the instructor generates and delivers the content for the students.

A second learning outcome for the computer mouse lesson could be, “Students will be able to identify missing mouse designs and features.” To achieve this learning outcome, students could visit an electronics store to interview experts about different types of mouse options and features. Then they are also learning how to formulate questions, conduct interviews, process information from experts, compile data, and prioritize or evaluate results.
Or, during class, the instructor could divide the students into groups and assign a different task for each one. Some groups might analyze different mouse features and record observations and conclusions. Another group could review consumer data and identify optimal mouse features and potential missing mouse features. Another group could review data gathered from a prior-to-class interview exercise or interview students around campus to collect more data.

All of this activity in the flipped classroom creates a ‘messy’ learning environment. The classroom is dynamic, interactive, and noisy. It can be challenging to bring everything to a close and prepare for the next out-of-class activity. The instructor must have a plan for bringing everything together and harnessing all the energy, ideas, and enthusiasm at the same time.

One closing strategy is what Dr. Honeycutt refers to as the “So What, Now What?” question. The students analyzed new features for the computer mouse. So What? Now what are they going to do with that information? The “So What, Now What” question reinforces the learning and pushes the students towards the next step. It allows for continued learning beyond the scheduled class time.

This is a critical step because each lesson connects to the next one. This is the moment to assess students’ learning, reinforce important concepts, and set the students up for success so they are prepared for the next class and can build on what they learned in this one.

To bring class to a close, students could complete an exit survey where they list three things they learned in class. Or, they could identify the most important takeaway from the class and explain why that concept is so important. Another way to end class is to give students time to complete a one-minute writing assignment, or they could list the “clearest point and muddiest point” from the lesson. Alternatively, instructors could also invite students to blog about their class experience or to post a comment on a class discussion board.

Ending a flipped class is important, and time should be spent on planning an activity that allows students to bring all activity to a close. The closing brings all the students together to a common place so that they can all move forward from there to the next lesson. It is critical for the instructor and the students to connect the learning goals for the lesson and measure whether or not the students achieved the learning outcomes. The ending of one lesson is always the beginning of the next.
4. SELF-ASSESSMENT: WHAT SKILLS DO I NEED?

Flipped learning environments require careful planning and design, but the plan is only part of the equation. The instructor’s skill and attitude are critical to making the flipped approach successful. Instructors must consider not only the components of a flipped classroom or a flipped lesson plan, but also the professional development and training necessary to create a successful flipped learning experience for themselves and their students.

In all of the discussions about flipped classrooms right now, this information seems to be missing. Much of the focus has been on how to create videos, screen captures, and voiceovers, or how to integrate different technological tools into the classroom. Those are important, but they are not the only factors. The instructor is more important than any technological tool, yet instructors often forget to invest in themselves.

It is easy to assume that instructors already know their material and how to teach in their discipline. Yet the instructor’s role is different in a flipped classroom. This is not a place for the “sage on the stage,” telling students what they are going to learn, lecturing to them, and testing them with a final exam. In a flipped classroom, the instructor is the “guide on the side,” asking what students need to be able to do or accomplish with the course material and then supporting students as they learn. This role requires a new set of skills and attitudes about what the learning process involves and how to let go.

This role requires a new set of skills and attitudes about what the learning process involves.

One of the first steps instructors might consider is conducting a self-assessment to determine their strengths, challenges, and teaching behaviors. For example, a flipped classroom can be an interactive and messy place. Is the instructor comfortable with this kind of learning environment? Is he or she capable of subtly managing that environment and keeping students on task, moving toward learning goals, without lecture and without stress? Is the instructor comfortable letting go of some of the control?

Consider again our “Current Issues in Technology” classroom. Imagine a class in which students are divided into groups, with each group working on a different task or activity. What skills does the instructor need to make this type of learning environment successful? Flexibility, time management, planning, and creativity all would benefit an instructor in this kind of classroom. Instructors need to be able to think on their feet, to address questions without always answering them, and prepared to change direction if things are not working. This last attribute—adaptability—is critical in the flipped classroom. Instructors need to be able to read students and determine whether they are moving toward learning goals or getting overwhelmed.
It is also important to remember that flipped classrooms are high-energy spaces. To maintain control while still allowing for freedom and flexibility, instructors need to prepare a plan for managing activity. Without advance planning, the classrooms can turn into chaotic places where little or no learning happens and both the instructor and the students are frustrated.

Instructors who flip their classes or integrate active learning into their lessons need to be involved and move around the classroom. They need to create opportunities to interact with groups of students or with individual students. Instructors need to be prepared to ask different kinds of questions to probe for further details or to challenge students’ thinking.

One of the beauties of the flipped classroom is that it supports experimentation. Sometimes activities and plans work, and sometimes they don’t. That is fine. Instructors need to accept this as part of the process and recognize when things need to be adjusted. There is always another way, another approach to try. Flipped classrooms support this when instructors are flexible.

Sometimes activities and plans work, and sometimes they don’t. That is fine.

Even though flipped classrooms are dynamic spaces, it is still important for instructors to remember that they must maintain control of the learning environment. They are still the instructors, and it is their responsibility to keep students moving toward learning goals. Instructors using flipped lessons must anticipate and be prepared to harness and control the energy generated during class while still creating a welcoming and inclusive space for students to practice and learn from each other.

Before flipping a lesson, instructors should ask themselves a few questions and reflect on their teaching style to determine whether they are ready for the new approach. These could include the following:

- Am I prepared to ask a variety of questions?
- Would I be comfortable letting go of “control” of the classroom?
- Am I willing to take risks in the classroom?
- Am I willing to learn new things?

After reflecting on these types of questions, instructors might decide that they are ready to try it. Instructors new to this type of student-centered learning might first experiment with flipping just one lesson. Others might consider observing a flipped class or asking a colleague to observe their teaching to learn more about their teaching style. They could also video their own classes and analyze their style, strengths, and weaknesses.
Despite the growing popularity of student-centered learning, not everyone understands or appreciates the role of the flipped classroom as an approach to shift away from instructor-focused classrooms. Instructors should also carefully consider the culture of their departments, schools, colleges, or universities before implementing a new approach. While flipping is gaining traction on campuses across the country, not all are embracing it with the same enthusiasm or in the same ways. Teaching in a flipped classroom does not look like traditional teaching, and those unfamiliar with it might not appreciate it or support it at first.

Unprepared students are another challenge facing all educators in classrooms today, but this is a recurring area of concern in the flipped classroom. Instructors need to consider how those students will affect the learning environment and create strategies to enhance motivation. The consequences related to unprepared students in a flipped classroom are different from those in a lecture-centered one. Since in-class activities are essential to the prior-to-class activities, it is critical that students come to class prepared to participate. In the active learning environment, it is nearly impossible for students to achieve the learning outcomes unless they have completed the prior-to-class work. If too many students are unprepared, the entire pace of the lesson can be derailed and prepared students will become increasingly frustrated with this approach.

To address these challenges, it is important to consider integrating formative assessment strategies or informal assessment activities into the class. Students could complete a quiz during the first five minutes of class time. Groups can also prove to be a powerful motivator. If students have to come to class and work together, peers will hold one another accountable for the success of their team. However, the instructor must create this culture early in the semester and continuously cultivate it over the entire course. Some educators also recommend creating lesson plan alternatives to accommodate the unprepared students and the high achieving students who want to go further than boundaries of the lesson plan.

It has always been a challenge for educators to address the issue of unprepared students. It is not a new phenomenon, but it has become a source of concern for many educators who are engaging in alternative course design. Many educators who are flipping their classes or using alternatives to the lecture find that students are increasingly motivated and eager to succeed in these learning environments.
5. THE REVEAL

Dr. Honeycutt ends all of her professional development workshops and services with a strategy called “The Reveal.” She practices what she teaches by using flipped strategies in her events and then reveals all of the strategies at the end of the session. The reveal is metacognition. Metacognition is when learners think about what they learned and how they learned it. Many faculty tend to do this naturally when they are involved in a professional development workshop or seminar. It is a valuable skill to teach to students as well. It can help them increase their capacity to learn in many different ways, and in the flipped classroom, it can help them recognize when to apply what they’ve learned to a new situation.

6. SO WHAT, NOW WHAT?

Now is the time to consider what to do with the information gleaned from this report.

Instructors could complete the self-assessment form located in the appendices. They could contact their teaching and learning center or form a learning community with other faculty who are interested in these alternative course designs.

Another option is to visit a flipped class. Pay attention not only to what the students are doing but also to what the instructor is doing. Notice how the instructor is managing the messiness.

When instructors share their approaches—what they’re doing and why they’re doing it—it can help ease some anxiety.

Other instructors might try one flipped strategy in their next lesson. Simple ways to begin include a video, a forum, or a Google Doc or Twitter feed. Try one strategy, see how it feels, and then try another one. Instructors may decide to practice a strategy in front of a trusted colleague or friend.

A flipped classroom is a risk for both students and instructors. Students need to learn how to learn in the new environment just as instructors need to learn how to teach in it. When instructors share their approaches—what they’re doing and why they’re doing it—it can help ease some anxiety about the flipped classroom. Some instructors may decide not to explain the new strategy – it’s just the way the class is taught.

Any instructor considering the flipped classroom should complete a skills assessment and stay connected to a community of educators who are engaging in flipped course design to share experiences and learn new strategies.
APPENDIX A: QUESTIONS AND ANSWERS WITH DR. BARBI HONEYCUTT

Q: How can an instructor determine whether it is possible to flip a course? Also, how different is the coverage level in a flipped versus a traditional classroom?

HONEYCUTT: There are elements in any course that can be flipped, but the type of flip and the degree to which the course can be flipped will vary. Instructors should look for flippable moments rather than whether or not a whole course could be flipped. This perspective is especially valuable when an instructor is new to flipping.

There are, indeed, moments in any class when switching from lecture to interactivity can increase students’ engagement, motivation, and time on task. Sometimes this can be as simple as pausing for three minutes during a lecture and asking students to share notes with their neighbors to see whether there are any questions or gaps in their thinking. Sometimes it can mean taking 30 minutes to analyze a complex case study or compare alternative analyses of a short story.

Also, instead of thinking about coverage, think about the quality of the learning experience. Instructors can often cover the same amount of material in both the flipped class and the lecture-based class. Even if a topic really calls for lecture, instructors can still pause for three to five minutes to do a “think, pair, share” activity and then continue on with the lecture. Sometimes instructors leave one PowerPoint slide blank and use that as an opportunity to let students catch up with notes or to review a point made earlier in class.

Remember that content is everywhere these days, and it is often free. Search engines, online textbooks, online lectures, MOOCs, and other resources have all made it possible to find any answer to any question at any time. Students can look up things on their phones, laptops, or iPads at home, on campus, or in their cars. Knowledge is everywhere and is easy to find. What students cannot do on their own is analyze, synthesize, consider “What if?” questions or learn from an instructor’s stories, research, and experience. These are the flippable moments to look for in a class.

When instructors sit down to plan lessons, they should ask themselves what students can do to achieve the learning outcomes for that lesson. Instructors cannot know what it is like to not know the course material. They cannot unlearn what they have mastered. It is the students’ turn now to struggle, ask questions, and do the heavy lifting. That’s another place to look for flippable moments.

That is a reminder of one additional place to look for flippable moments. Start with the information with which students struggle the most. What is the most challenging theory to learn in the course? What is the most difficult theorem? What poem causes the most
confusion or debate? What equation causes the most mistakes in lab? These are clues for instructors to analyze so they can break down the information, present it in a variety of ways, and allow increased opportunities for students to practice, make mistakes, make corrections, and practice again. These are perfect moments for videos that students can watch and rewatch until they grasp the concept. These are perfect moments for self-quizzes, practice tests, and peer instruction. These are the flippable moments that can help students achieve learning outcomes.

Consider this story about a flipped workshop on teaching philosophy. The workshop included a video of an interactive lecture. The participants watched the video, which included segments on what teaching philosophy is, what instructors should include, how it is used, and so forth. There were moments in the video where participants had to pause it to complete a worksheet or questionnaire before proceeding to the next part. At the end of the video, the task was to write the first draft of the teaching philosophy and then bring it to a peer review workshop.

Prior to flipping this workshop, that was the workshop. Now it is the before-class work for the workshop. Participants come to the workshop with the first draft of their philosophies in hand. A review process provides feedback from peers and the instructor. The instructor role shifted completely from lecturing to providing critique, analysis, input, and feedback on the students’ philosophy statements.

The flipped format allowed the instructor to cover more material because the hour was spent discussing and analyzing rather than lecturing. That freed up workshop time so the group could move into higher levels of Bloom’s Taxonomy.

Q: How do you measure performance and results?

HONEYCUTT: Assessment can be a whole separate seminar, but here are a few strategies and ideas to keep in mind in the flipped environment: Instructors can effectively measure students’ learning and performance in this flipped environment. In fact, instructors will most likely be able to assess learning and performance more accurately and more frequently in a flipped class than in a course designed only around lectures, a midterm exam, and a final exam, because a flipped class provides more opportunities for feedback. More important, students will be able to assess their own learning and performance throughout the course by working with their peers, completing prior-to-class activities, and engaging in activities during class time.

As with any course, instructors will want to align assessment strategies with learning outcomes. In the flipped class, learning outcomes will focus on the higher levels of Bloom’s Taxonomy. The out-of-class learning outcomes will focus on the lower levels of Bloom’s
Taxonomy. Thus, instructors will need to structure assessments accordingly. Out-of-class assessments should be brief, and they should focus on measuring students’ abilities to achieve the lower-level learning outcomes. For example, are they able to list the parts of the experiment they will perform in tomorrow’s lab? Are they able to identify the main characters in the story? Are they able to describe the three most important features of the computer mouse, based on the most recent consumer reports? This level of assessment will help students build the content knowledge they need in order to achieve the higher levels of thinking that instructors strive for in the flipped environment.

Also, every assignment students do in the flipped class may not be formally graded, but the work should be recognized in some way. Timely feedback is essential, and this will also help address issues related to accountability. Some assignments may count toward participation points, for example. If there is a large, comprehensive assignment at the end of the semester, an instructor could divide the large assignment into smaller tasks or pieces that are completed during class time and are graded individually throughout the semester. This way the assignments and students build toward the final product. Students will still engage in higher-level thinking activities outside of class. These might include such things as writing a final paper. Yet every assessment and in-class activity should be designed to support students in reaching that larger goal. Course mapping exercises can help instructors create plans that ensure that learning outcomes align with activities and assessment strategies.

Other assessment strategies include the following:
1. Create automated multiple-choice tests or quizzes in the learning management system (e.g., Moodle, Blackboard), which allows instructors to quickly see where students are struggling before it is time for the exam.
2. Offer practice quizzes or tests in groups or pairs to reduce the time spent giving feedback to each individual student after every assignment.
3. Use test banks or existing products from the publishers’ resources, if these exist.
4. Use clickers or cell phones as real-time assessment tools to check in with students during class. (Poll Everywhere, found at www.polleverywhere.com, is one example of a free online tool that allows cell phones, iPads, and laptops to operate as clickers.)

Q: How do you flip a big class of 100 students when the class is based heavily on lecture (due to size)? Is there an optimal class size for flipping?

HONEYCUTT: There are strategies to flip a class of any size. There is not an optimal size for active learning strategies, although instructors have more options with smaller classes. However, very small classes (those with fewer than 10 students) can also be challenging if the students do not invest in the process or if groupthink overtakes the class. In any case, it is imperative for the instructor to set the tone on the first day and to support students
through the learning process from the very beginning of the term. It may take a couple of weeks to help them reach the desired level of participation. Similar to faculty members who are learning how to teach in this type of environment, students are also learning how to learn in this type of environment.

In a large class, instructors can use strategies such as “think, pair, share.” That means an instructor poses a question to the whole class and asks everyone to think or write about it for a couple of minutes. Then the instructor asks the students to turn to their neighbors and discuss their thoughts. Next they can share with a larger group or perhaps even the whole class. This strategy works with any class size, but it is easily adapted to the large class. The biggest challenge an instructor might face is how to bring everyone back together again and quiet the discussion. Some instructors use whistles, timers, or chimes, for example. Other strategies include the following:

1. Divide the large class into smaller sections to meet later in the week.
2. Form breakout groups online if it is not possible for groups to meet in person.
3. Integrate self- and peer-assessment tools so students don’t feel as though they are “just a number” in the classroom and to encourage them to keep up with their learning.
4. Collect low-stakes assignments from a group rather than from individuals.
5. Randomize how feedback is collected.

Here is an example of this last option: One day of the week, collect the in-class assignment from students whose last names begin with A–M. At the next class, collect assignments from students whose last names begin with N–Z. Another option is to collect feedback from every other row in the lecture hall or from only the students sitting in the back row. Mixing it up each time will keep students on their toes because they will not know which type of feedback will be collected from which group of students. Other ways to include active learning strategies and flipped strategies in large classes is through clicker use. This allows students to respond to questions in real time. Online tools such as Poll Everywhere (www.polleverywhere.com) allow students to use cell phones, laptops, and iPads as clickers. Sometimes these online tools are free for a certain number of participants (up to 50 for Poll Everywhere). Even this offers instructors an opportunity to divide students into pairs or small groups and come to an agreement about the response for submitting it.

Q: How does an instructor plan for students who are not prepared? This includes those who miss class, the free riders who attend and participate minimally and only as they see fit; and those who are unmotivated and do not respond to the low-stakes grading as an impetus to prepare.

HONEYCUTT: When instructors flip classes using recorded videos and other online strategies, students who miss class are still able to watch videos and participate in online
activities. As instructors design more active learning strategies during class, students will quickly see how important it is to actually attend class. Several researchers have compared flipped classes to traditional classes, and the findings consistently show that flipped classes lead to increased attendance.

It is important to note that, when students attend class, instructors need to make sure that class time has value to those who have completed the prior-to-class activities. For example, if students generated a list of the top 10 most desired features of the computer mouse of the future, then instructors should not stand at the front of the room and give a list of the top 10 most desired features of the computer mouse of the future. That will not be valuable, and the students will not do the prior-to-class work from that point forward. Students need to know that the work they have done prior to class will set them up for the next step and that the information will be used in a way that matters.

If instructors design more collaborative learning activities and implement group discussions, then students will also hold one another accountable. Peer pressure can be a powerful motivator. Of course, no teaching strategy will guarantee 100 percent participation and engagement, but if instructors can explain why they are using this approach and can successfully create a learning environment that is supportive, then they are more likely to reach more of the students and enhance learning for those who choose to invest in the process.

Motivation could be another separate workshop topic. For further reading, consider Dan Pink’s book *Drive*, which discusses a framework of motivation that includes autonomy, mastery, and purpose. Including these three elements in a course can enhance student motivation. If instructors combine these elements with effective in-class activities, they should be able to set the tone for an interactive and engaged learning environment.

**Q: How do you flip an online classroom when synchronous meetings are not required?**

**HONEYCUTT:** In-person meetings or synchronous discussion is not required to implement flipped techniques. It just requires thinking about the online environment a little differently. An instructor could use individual work as a prior-to-class activity and then use the discussion forum as an in-class activity. Instructors should still focus on lower levels of Bloom’s Taxonomy for the individual work and higher levels of Bloom’s Taxonomy for the more public work, such as posting to a discussion forum.

Consider an asynchronous, self-paced online workshop about effective questioning strategies. The students begin the workshop by watching a 10-minute video of a professor giving a lecture (e.g., a YouTube video). They have not read anything at that point. They simply watch the lecture and think about whether or not the questions asked are effective.
After they watch the 10-minute lecture, students complete a reading that explains the five types of questioning strategies. Then they watch the video again, specifically looking for evidence of the five types of questioning strategies. After they watch the video the second time, they are asked to create a discussion board post that compares and contrasts their reactions with those from watching the video the first time. Then they are asked to evaluate the professor's questioning strategies. Other students then reply to their post. They often notice that their peers observed different questioning strategies, and the discussion moves into a higher level of analysis when they evaluate and analyze the professor's approach.

In this example, notice that the discussion board posts are focused on activities such as compare, contrast, analyze, and evaluate. In essence, this flips the way students interact with one another on the discussion boards, because the activity requires them to review the knowledge they gained from reading the article and apply it to the video before they critique and analyze the lecture. While classes in these online workshops never convene in real time, students are still able to move into the higher levels of synthesis and analysis. Instructors could enhance this by adding small groups online or setting up pairs activities to stimulate more collaborative learning experiences.

Q: Would a flipped class work in a liberal arts classroom as well? Are there any examples?

HONEYCUTT: Flipped techniques can work in any learning environment, including liberal arts classes. A poetry instructor wanted to apply flipped techniques to a lesson plan. She posted the poem online and then asked students to complete a low-stakes writing assignment and submit it to the discussion board prior to class.

Low-stakes writing assignments can be used for any discipline, not just liberal arts courses. Low-stakes writing assignments are brief and focused. They can be graded or reviewed quickly. The writing is usually conversational in tone and shows evidence of thinking and not just summarizing. Some examples include the following:

1. Read the poem and post three questions to ask during class.
2. Write a letter to the main character of the poem.
3. Tweet your reaction to what happened in the last stanza of the poem.
4. Create a blog post.
5. Adopt a persona and reply to the poem (e.g., write from the perspective of an modern environmentalist or a farmer in the 1700s).

These informal, low-stakes writing assignments are free flowing and encourage more risk taking, especially in a course in which students might feel apprehensive about sharing their analysis of a poem or coping with emotional reactions to topics in class. The low-stakes writing assignment allows them the opportunity to write through their thinking process.
Consider other questions an instructor could ask the class to explore. How is A related to B? What were two main arguments made by the author? What is the thesis of the reading? Double-entry responses (pros on one side and cons on the other) allow for analysis of both sides of an issue. Students could complete one side of the response before class, and then the focusing activity could be to complete the other side when they arrive at class.

Instructors can get creative. One faculty member flipped a lesson about iambic pentameter. He posted a two-minute video (a voiceover with PowerPoint slides) about the rhythm of iambic pentameter. He also asked students to bring in the lyrics to songs they liked so they could analyze them in class.

**MISCELLANEOUS Q&A**

Q: How might you teach an introductory astronomy course?

HONEYCUTT: That is a very good question. There is some debate about using flipped strategies in an introductory course, and there is research supporting both sides of the argument. Some believe flipped strategies are not effective in the introductory course because students do not usually have prior knowledge or experience with the topic. Others have found that intro courses are ideal for flipped strategies because instructors can enhance motivation and engagement with the subject. Also, videos and other tools allow students to rewatch or reread material as many times as they need to. They can then learn at their own pace and ensure they are achieving the expectations and outcomes for the course.

It is probably unwise to flip the whole course, but it would be worth experimenting with a few flipped strategies in some lessons. Instructors new to flipping should start small and simple. They can then move to more complex strategies as they gain confidence and become more aware of the topics with which students struggle. Those might be the best lessons for flipping, because students are having difficulty with them in the traditional format.

For further reading, consider the following resources:

- Shaver, M. (December 2010). Using low-tech interactions in the chemistry classroom to engage students in active learning. *Journal of Chemical Education*, Vol. 87, No. 12. (This article focuses on chemistry, but the strategies listed are ones instructors can easily integrate into any class, regardless of size or discipline. The strategies listed do not require the use of technology beyond clickers.)
The University of Wisconsin–Madison featured a nice blog post on the pros and cons of flipping (see https://tle.wisc.edu/tleblogs/jhenriqu/how-flipping-classroom-can-improve-traditional-lecture). This article might generate a few ideas for instructors just starting to think about integrating more student-centered learning activities into lessons and classes.

The University of Minnesota has a list of 12 strategies for flipping using PowerPoint slides (see http://www1.umn.edu/ohr/teachlearn/tutorials/powerpoint/learning/index.html). These strategies might help instructors get started with a few low-stakes activities.

Q: What is the role of text in this kind of approach?

HONEYCUTT: The textbook, course packet, or any other reading material is still part of the flipped classroom. The thing to keep in mind is that students interpret a reading assignment in different ways, so it is important to be clear and to attach and communicate the learning objectives of all reading assignments. Instructors must be explicit with any prior-to-class work, including reading. It may seem improbable for students at the college level, but they may need to be taught how to read for learning. That means more than just skimming over the material or highlighting every definition in the book.

Instructors can support this process by designing a low-stakes assignment to accompany the reading (or any other prior-to-class work, including videos). Low-stakes assignments could include a brief writing assignment, self-assessment, or self-test. They could include completing a tool such as a worksheet, reading rubric, or diagram. These assignments and activities provide structure to the reading experience and also allow you to hold students accountable for the prior-to-class work. Another way to incorporate text is to design opportunities for reading during class, which does not seem to happen very often in higher education settings.

Q: Do the students have time to reflect on what they have learned?

HONEYCUTT: Absolutely. Reflection in active learning environments is critical. Students don’t necessarily learn everything they need to know simply by doing the activity. Doing the activity is a good place to start, but often students learn by doing and reflecting on it. Unless students make meaning and build connections, all they have done is complete an activity, so they might miss the point. This can happen with the use of games in the classroom. They participate, they’re engaged, they’re excited, and they answer a few questions. But unless they step back and reflect, they’ve missed the whole point of the game in the first place. They forget to step back to consider the questions they missed and whether those will be on an exam.
Students simply can get excited in an active learning environment, and that is a great thing. But sometimes instructors need to pause for a moment to give them time to process information. All students can benefit from pausing, reflecting, analyzing, and processing information. They may need structure from the instructor in terms of how to reflect in ways that advance and enhance learning. This is part of the instructor's new role in the flipped learning environment. The instructor provides the space, the time, and the structure for this type of learning to occur.

Q: How do you deal with results that are not aligned with expected learning outcomes?

HONEYCUTT: Some of this comes down to being open and being flexible. Certainly some courses have standardized material that must be mastered, but sometimes it is fine to veer off course a little bit. Maybe students want to see whether it is possible for a computer mouse to fly and deliver a pizza. It likely is not part of any learning outcome, but there may be some value in encouraging creativity and harnessing motivation. The process may invigorate them and energize them for class. There is nothing wrong if the student leaves class having learned something unintended yet still valuable. That should be considered a success as long as, overall, students are meeting required learning objectives.

Q: Where do you find activities if you have not done them before?

HONEYCUTT: There are so many great resources available to instructors who would like to experiment with flipping. Of course, Magna Publications and The Teaching Professor are always great resources. Instructors should also consider a campus teaching and learning center or faculty support center. Graduate students may have access to certain professional development programs on campus. There are also blogs and online communities. Finally, professional development programming, such as online seminars or conferences, also offers great resources. Keep in mind that many strategies work across disciplines, so instructors in one department should not be afraid to share ideas with an instructor in a different department.

Q: Some at-home activities could cost students a lot. How can instructors control the cost?

HONEYCUTT: Using videos and online activities outside of class has been a concern for school districts in economically depressed communities and for students who do not have a computer or Internet access at home. However, instructors do not have to design courses in ways that require technology for pre-class work. It is possible to structure low-tech assignments and then use active learning strategies during class time.

This is exactly why many of those who flip are working so hard to expand the definition of
what it means to flip a class. At its core, the flip is the switch from instructor-centered instruction to student-centered instruction, and you don't need any expensive technology to do this effectively. Sometimes low-tech options are the best learning experiences. For example, in one learning styles workshop, flip charts and markers are the only “technology” used. However, that workshop consistently earns high ratings from participants who feel that they are actively engaged in solving problems and working collaboratively.

For further information, read *Teaching Naked: How Moving Technology Out of Your Classroom Will Improve Student Learning* by Jose Antonio Bowen.
APPENDIX B: GETTING STARTED WITH A FLIPPED LESSON PLAN

Getting Started with a Flipped Lesson Plan

Date for Lesson: ___________________ Topic of Lesson: ___________________

Students will be able to:

- Evaluation: critique, judge, monitor, review, test, defend
- Synthesis: combine, rearrange, create, produce, plan
- Analysis: compare, organize, outline, connect, examine
- Application: implement, use, execute, play, demonstrate
- Comprehension: describe, explain, summarize, discuss
- Knowledge: define, list, memorize, recall, repeat

Purpose: What do students need to be able to do at the end of this lesson?

Students will be able to [begin with action verb] ______________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

Learning Outcomes: [Choose activities that address a lower level of Bloom’s Taxonomy than you will use in class.]

Students will be able to ____________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

To achieve the outcome(s), students will [What will students do to prepare them to reach the big goal by the end of class?]

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

When students arrive to class, how will class begin? [What is the Focusing Activity?]

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

Now go back and refer to the purpose of the lesson. Write the learning outcomes below:

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

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APPENDIX B: GETTING STARTED WITH A FLIPPED LESSON PLAN

Learning Outcome: [Choose activities that address a higher level of Bloom's Taxonomy than you used for the out-of-class LO.]

Students will be able to ____________________________________________________________

To achieve this outcome, students will [What will students do during class to achieve this outcome?]

Learning Outcome: [Choose activities that address a higher level of Bloom's Taxonomy than you used for the out-of-class LO.]

Students will be able to ____________________________________________________________

To achieve this outcome, students will [What will students do during class to achieve this outcome?]

Learning Outcome: [Choose activities that address a higher level of Bloom's Taxonomy than you used for the out-of-class LO.]

Students will be able to ____________________________________________________________

To achieve this outcome, students will [What will students do during class to achieve this outcome?]

How will class end? [How do you know if your students “get it”? What is your assessment strategy?]

Remember, the end of this lesson plan is the beginning of the next.

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APPENDIX C: GETTING STARTED WITH A FLIPPED LESSON PLAN—
THE REVEAL

Getting Started with a Flipped Lesson Plan

Date for Lesson: February 12, 2013

Topic of Lesson: The flipped approach to a learner-centered class

Students will be able to:

- Evaluation: critique, judge, monitor, review, test, defend
- Synthesis: combine, rearrange, create, produce, plan
- Analysis: compare, organize, outline, connect, examine
- Application: implement, use, execute, play, demonstrate
- Comprehension: describe, explain, summarize, discuss
- Knowledge: define, list, memorize, recall, repeat

Purpose: What do students need to be able to do at the end of this lesson?

Students will be able to (begin with action verb) [1] expand the definition of what it means to “flip” a learning environment; [2] analyze a flipped lesson plan so they can create their own; and [3] identify the skills they need to develop to ensure their flipped class is successful.

Learning Outcomes: [Choose activities that address a lower level of Bloom’s Taxonomy than you will use in class.]

Students will be able to [1] identify which levels of Bloom’s Taxonomy are emphasized in a flipped class; [2] list the 4 parts of a flipped lesson plan.

To achieve the outcome(s), students will [What will students do to prepare for class? Make sure it helps them achieve the purpose.]

[1] watch a 2 minute video prior to the seminar; [2] fill in a blank diagram of Bloom’s Taxonomy on their own.

When students arrive, how will the seminar begin? [What is the Focusing Activity?]

After the introduction from Magna representatives, students will complete a quiz about the video. I will review each quiz question and make connections to the upcoming definition activity and example lesson plan activity.

Now go back and refer to the purpose of the lesson. Write the learning outcomes below:
APPENDIX C: GETTING STARTED WITH A FLIPPED LESSON PLAN—THE REVEAL

**Learning Outcome:** [Choose activities that address a higher level of Bloom's Taxonomy than you used for the out-of-class LO.]

**Students will be able to:** expand the definition of what it means to "flip" a learning environment.

**To achieve this outcome, students will:** [What will students do during class to achieve this outcome?]

collaboratively analyze each section of a simplified example lesson plan and share strategies for flipping the lesson. The tool for the example lesson plan is the computer mouse.

**Learning Outcome:** [Choose activities that address a higher level of Bloom's Taxonomy than you used for the out-of-class LO.]

**Students will be able to:** analyze a flipped lesson plan.

**To achieve this outcome, students will:** [What will students do during class to achieve this outcome?]

connect the teaching skills to the strategies discussed during the analysis of the example lesson plan. Volunteers will share examples of skills needed to implement the flipped lesson plan.

**How will class end?** [How do you know if your students "got it"? What is your assessment strategy?]

Class will end with "The Reveal" which will show students how I flipped this lesson. There will be time for Q&A.

Finally, I will refer to the additional resources and highlight the ones that came up most frequently during the Q&A.

*Remember, the end of this lesson plan is the beginning of the next.*

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APPENDIX D: FIVE WAYS TO FOCUS YOUR PARTICIPANTS' ATTENTION

Focus on your learners by involving them in the process

“Okay everyone, let's get started!” 5 Ways to Focus Your Participants’ Attention
Barbi Honeycutt, Ph.D., Founder, Flip It Consulting

Did you know the first five minutes of your seminar or workshop can be a “make or break” moment?

Well, that might be a little dramatic, but seriously, those first five minutes hold a lot of power and they deserve a little more consideration than you probably realize. Most facilitators begin their workshop or seminar with the typical “Hello everyone, welcome to the seminar, thank you for coming today, I am the workshop facilitator, my background is...” Well, okay. That’s one way to get started. An opening like this is expected. It’s typical. How about we mix it up a little? Let’s flip it!

First, let’s start with the reasons why you might want to flip the first five minutes of your seminar. The two main reasons? Distractions and time. Let’s start with distractions. Your participants are busy people. They are coming from a variety of places and juggling numerous responsibilities. Maybe they had a hectic day at the office. Maybe they just picked up their kids after school. Maybe they just closed a deal on a new client. Maybe they are attending your seminar before heading home to cook dinner and help their kids finish their homework. Maybe they just hung up the phone with their sister after planning next weekend’s family cookout.

Bottom line: When your participants enter your seminar, they are distracted. Their minds are in a dozen different places, and now they’ve added one more thing to their list by attending a seminar. When you flip the first five minutes, you immediately focus your participants’ attention on the topic of your seminar. You instantly direct their energy away from the distractions and towards the topic. And this leads us to our second most important reason for flipping the first five minutes...

Reason number two is time. Time is valuable, and you only have so much of it when you lead a seminar. You want to maximize your time and your participants’ time. You want to ensure everyone that the time they have invested is worth it. If you flip those first five minutes, you will engage your participants, enhance their curiosity, and increase their motivation. If your participants are eager to attend the seminar, then they are probably already a little nervous or excited. You can harness that energy in those first five minutes. If your participants are not as excited about attending the seminar – maybe because it’s required by their boss, for example – then in those first five minutes, they will see why the topic is important and know that they are not wasting their time.

Ah ha! Now can you see the power of those first five minutes? Okay, so now what can you do in those five minutes to reduce distractions and maximize time? Use what I call a “focusing activity.” Focusing activities are designed to – you guessed it – focus your participants’ energy. Here are five ideas you can try:

Focus with a quote
Post a quote on the board or screen (or on the top of your handout). As participants enter the room, they can read the quote and informally discuss it with you and/or their colleagues. The quote may be controversial, provocative, motivational, inspirational, funny, or thought-provoking.

Focus with a question
If you use a presentation tool (such as PowerPoint® or Prezi®) make slide number one a question. Move your typical introductory slide to slide two, and use the question in the same way you might use a quote in the previous tip. Post the question and see what kinds of discussions emerge.
APPENDIX D: FIVE WAYS TO FOCUS YOUR PARTICIPANTS’ ATTENTION

Focus with a quiz
Quizzes get a bad reputation, but you can design all types of quizzes for every seminar topic you can imagine. Don’t think of quizzes as tests. Think of them as tools to prompt self-reflection or analysis about a topic, idea, or belief. For example, you can design a quiz that allows participants to self-analyze their habits or behaviors (“I am very strong/strong/weak/poor in my time management skills”). This prompts the participants to start thinking about their own reasons for attending the seminar and focuses their attention towards the goals they hope to achieve. Of course, quizzes can also be based on your content, so you could design a pre-/post-test on how much participants know at the beginning of the seminar vs. at the end.

Focus with a problem
Our minds love to wrestle with problems. We are hard-wired to find the answer, solve the mystery, or find the missing piece. Use that innate characteristic as a focusing activity. Give the participants a mini-problem or mini-case study to discuss as they enter the room. Connect the problem to the topic of your seminar.

Focus with a story
Our minds also love stories. After all of your participants arrive and are seated, begin with a story even before you introduce yourself. Tell a story about a time when something went wrong...or how something went right. One tip: Connect the story to the topic of your seminar. At some point, the story should connect to purpose of the topic or else you're at risk for causing more distractions and wasting time.

These are just a few focusing activities for you to try. Try one, combine two, or invent your own activity for the first five minutes of your seminar. A typical introduction such as, “Hello, welcome to the seminar, blah, blah, blah” violates the cardinal rule of flipping. You’re not focusing on your participants. You’re focusing on you.

Try a focusing activity during your next seminar. Let me know how it goes!
APPENDIX E: BRAINSTORMING THE FLIP

Brainstorming the FLIP

Date for Lesson: ___________________________ Topic of Lesson: ___________________________

Students will be able to:
- **Evaluation**: critique, judge, monitor, review, test, defend
- **Synthesis**: combine, rearrange, create, produce, plan
- **Analysis**: compare, organize, outline, connect, examine
- **Application**: implement, use, execute, play, demonstrate
- **Comprehension**: describe, explain, summarize, discuss
- **Knowledge**: define, list, memorize, recall, repeat

Purpose: What do students need to be able to do at the end of this lesson?

Students will be able to ___________________________

<table>
<thead>
<tr>
<th>Learning Outcomes: Before coming to class, students will be able to: [Tip: Address lower levels of Bloom's Taxonomy.]</th>
<th>Learning Outcomes: By the end of this class, students will be able to: [Tip: Address higher levels of Bloom's Taxonomy.]</th>
</tr>
</thead>
<tbody>
<tr>
<td>To achieve these outcomes, students will: [Focus on what the students will DO to achieve the learning outcomes.]</td>
<td>To achieve these outcomes, students will: [Focus on what the students will DO to achieve the learning outcomes.]</td>
</tr>
<tr>
<td>Tools/Resources Needed:</td>
<td>Tools/Resources Needed:</td>
</tr>
</tbody>
</table>

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APPENDIX F: BRAINSTORMING THE FLIP—COMPUTER MOUSE EXAMPLE

EXAMPLE: Computer Mouse

Brainstorming the FLIP

Date for Lesson: February 12

Topic of Lesson: The Computer Mouse

Students will be able to:

- **Evaluation:** critique, judge, monitor, review, test, defend
- **Synthesis:** combine, rearrange, create, produce, plan
- **Analysis:** compare, organize, outline, connect, examine
- **Application:** implement, use, execute, play, demonstrate
- **Comprehension:** describe, explain, summarize, discuss
- **Knowledge:** define, list, memorize, recall, repeat

Purpose: What do students need to be able to do at the end of this lesson?

Students will be able to create a new feature for the computer mouse of the future.

<table>
<thead>
<tr>
<th>Reading Outcomes: Before coming to class, students will be able to: [Tip: Address lower levels of Bloom’s Taxonomy.]</th>
<th>Reading Outcomes: By the end of this class, students will be able to: [Tip: Address higher levels of Bloom’s Taxonomy.]</th>
</tr>
</thead>
</table>
| - identify existing computer mouse designs  
- list the existing features of a computer mouse | - analyze the pros and cons of existing computer mouse styles  
- examine missing components/features  
- research realistic features that computer users want  
- design prototype or plan for a “computer mouse of the future” |

To achieve these outcomes, students will: [Focus on what the students will DO to achieve the learning outcomes.]

- watch a video of current computer mouse designs  
- do an internet search of at least 3 types of computer mouse designs and features  
- ask at least 3 people what type of computer mouse they use  
- Accountability: maybe they could fill out diagram of the computer mouse and list the function of each. Students should bring their diagram to class.

To achieve these outcomes, students will: [Focus on what the students will DO to achieve the learning outcomes.]

- work in small groups to compare lists of functions and see who found different designs and functions.  
- each group could generate one complete list and prioritize the most important design features and functions.  
- groups could work on a whiteboard to draw rough sketch of the computer mouse  
- create a survey to send to computer users to assess the most important features of a computer mouse  
- analyze the impact of the tablet / touch screens on the use of a computer mouse.

Tools/Resources Needed:

- video equipment; photos of different computer mouse designs (does a video already exist?)  
- worksheet or discussion board for students to list the features they discover  
- worksheet/diagram for students to fill in and bring to class.

Tools/Resources Needed:

- tables for small groups; laptop or computer access for each group  
- whiteboard or online tool to allow students to capture their design ideas  
- survey tool for students to submit questions  
- example tablet or touch screen tool
APPENDIX G: THE REVEAL FOR THE WHOLE WORKSHOP

The Reveal for the Whole Workshop

One of my philosophies is to model and reveal the techniques and strategies I use during workshops so participants can experience the learning environment from a student’s point of view. Here are a few of the strategies I used in this online workshop that might be helpful as you design your own flipped lesson:

Focusing activity: The quiz based on the video.

Case study / Simulation: The video was lighthearted yet informational for the topic of our workshop (lesson planning). This topic was directly connected to our workshop topic but not any particular discipline. Hopefully the video gave you the experience of being a student in a flipped environment that uses a video. However, remember, you can flip a class with more than videos! (Video was created using Powtoon.com)

Questioning: Discussion questions were carefully crafted ahead of time based on the learning outcomes. Questions were asked to prompt discussion and critical thinking. No “Are there any questions?”

Collaborative analysis: Instead of telling you all the details involved in flipping a lesson plan or just showing you a completed one, I designed a collaborative activity where we analyzed it together.

Discussions: I facilitated brief online discussions, mostly by designing where in the workshop answers from the audience would fit into the overall plan.

Ask First, then Tell: Throughout the workshop, I first asked you for your ideas and then I told you the answers. This creates curiosity and encourages you to think, question, and reflect.

10 minute lecture & chunking: I tried not to talk at you for more than 10 minutes at a time. Each mini-lecture was followed by an activity, discussion or other strategy to reinforce the information.

Guided Notes & Application: The lesson plan handout allowed you to take notes and practice applying the concepts to a “real” learning environment (your classroom!)

So What, Now What? So what you created a flipped lesson plan...now what? At the end of the case study and the workshop, I ended with the “So What, Now What?” question to jump start your thinking about where to go from here. This keeps the learning going beyond the “class” time and allows you to set goals or next steps for your own professional development.

Modeling: I demonstrated many of the skills and techniques needed in a flipped learning environment. Example: All of our learning outcomes focused on the higher levels of Bloom’s Taxonomy.

Blank Slides: Although I didn’t use this strategy in the online workshop, I usually leave slides blank when I facilitate workshops in person to stimulate thinking and discussion.

Stay Connected!
Barbi Honeycutt, Ph.D., Founder, Flip It Consulting & Director of Graduate Teaching Programs, NC State University

barbi@flipitconsulting.com  http://www.linkedin.com/in/barbihoneycutt @flipitconsult
APPENDIX H: THE “SO WHAT, NOW WHAT?” QUESTION

Back in graduate school, when I finished (finally!) the painstaking process of writing my dissertation, my adviser looked at me and said, “Okay, Barbi. You finished your dissertation. So what?”

I must have looked at him like he was crazy. I sat there wondering what the past five years of data analysis, writing, editing, rewriting, and loss of sleep really meant. What did he mean “So what?” SO WHAT?!

I said something like, “Uh, I hope it means I’m finally finished with grad school? People will call me ‘doctor’ now? Uh, I can get a job, right?” Then he stopped me in my tracks when he said, “What I mean is, so what that you finished your dissertation? Now what are you going to do with it?”

Oh. Hmm...that is an interesting question. He reminded me that even though this experience marked the end of my learning in graduate school, it was really the beginning of something bigger. How was I going to use this new knowledge beyond the scope of graduate school? What difference would it make? How was I going to continue my learning beyond this experience? It was my “Aha!” moment.

In the years since that conversation, I now refer to this as my “So What, Now What?” question. I use this question every time I design a training session, create a lesson plan, or develop a meeting agenda. I'd like to share this technique with you because it will shift the way you design learning environments, presentations, and meetings and will help your participants see the value beyond the two-hour training session, the 50-minute class, or the one-hour staff meeting.

The benefit of the “So What, Now What?” question is that it helps you think outside of the box when it comes to concluding your session. Too often people just end their training sessions or classes with “Okay, thanks for a great class! See you next week!” or “Thanks, everyone! Contact me if you have questions. It was great meeting you!” These are really just dead ends.

The “So What, Now What?” question forces you and your participants to think bigger. You want your participants to continue their learning. You want them to see why this training session or this class matters. Designing your training session or class around the “So What, Now What?” question will give you focus and clarity, and it will help you give your participants the foundation and opportunity to extend their learning beyond the scope of your presentation, class, or meeting.

To begin, think about your presentation, class, or meeting. You know the saying “Begin with the end in mind.” Start by thinking about the end of it first. Ask yourself, “Okay, so what if my participants just attended my training session for the past two hours? Now what do I want them to do with that information?” or “Okay, so what if my students just participated in today’s class? Now what do I want them to do with that information?” or “So what if we just finished going through the agenda in the staff meeting? Now what do the employees need to do or need me to do next?”
Write down your thoughts. Do the participants go gather data to prepare for the next staff meeting? Do they complete a homework assignment? Do they return to their office and implement a new policy? Do they read the next module and prepare for next week's session? Do they go to my website and sign up for my monthly newsletter? Think about the next action you want them to take beyond the scope of your presentation, class, or meeting.

Once you determine what you want your participants to do at the end of the training session or class, work backward. Design your icebreaker, discussions, and activities to align with your list of what comes next. What's the answer to your "So What, Now What?" question?

Remember, though, you need to actually encourage participants to do something once they leave. Maybe you challenge them with a task that pushes them beyond the information presented in the class. Maybe you ask them to complete an activity that reinforces what they learned. Maybe you ask them to meet with another team in a different department to design a plan for collaboration. Maybe you offer an incentive or discount if they register for your newsletter. There are many ways to answer the "So What, Now What?" question.

Okay, now that you've read my article, so what? Now what? Go try it! Try to develop your own "So What, Now What?" strategy to conclude your next event, and let me know how it goes!
## APPENDIX I: SKILLS ASSESSMENT WORKSHEET

**Self-Assessment Worksheet:**
Developing Your Teaching and Facilitation Skills in the Flipped Classroom

<table>
<thead>
<tr>
<th>Statements to Consider</th>
<th>Mostly True</th>
<th>Usually True</th>
<th>Sometimes True</th>
<th>Not Often True</th>
</tr>
</thead>
<tbody>
<tr>
<td>I ask a variety of questions.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I am confident in my ability to manage the classroom.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>It’s okay when the topic shifts away from the learning outcomes.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I am comfortable letting go of some of the structure in my classroom.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I am comfortable working one-on-one with an individual student within the classroom environment.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I am comfortable not knowing all of the answers.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I am confident with my lecturing skills.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I have time to design learning activities.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I am willing to take risks in the classroom.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I thrive in environments that are dynamic.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I recover from mistakes quickly.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I am an effective communicator.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I am adaptable.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I am a good listener.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I delegate effectively.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I need to have control in the classroom.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I am willing to learn.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

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APPENDIX J: RESOURCES

JOURNAL ARTICLES, BOOKS, BLOGS AND VIDEOS:


Honeycutt, B. (2012). Flipping is about more than videos! Online at http://www.flipitconsulting.com/2012/07/17/flipping-is-about-more-than-videos/


TECHNOLOGY RESOURCES AND TOOLS:

Jing and Camtasia (capture screencasts/images): http://www.techsmith.com

Khan Academy (existing videos): http://www.khanacademy.org/

Multimedia Educational Resource for Learning and Online Teaching (MERLOT) (online resources for higher education): http://www.merlot.org/merlot/index.htm

Poll Everywhere (turn cell phones and laptops into clickers): http://www.polleverywhere.com/

PowToon (create video; add voice/music): http://www.powtoon.com

Technology, Entertainment, Design (TED) (existing videos): http://www.ted.com/
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