5 Interactive Assignments

- Learn how to create interactive assignments, applying Bloom's taxonomy
- Find resources for creating interactives
- Learn how to create rubrics for assessing interactives

This chapter is meant to be a guide of suggestions and thoughts about how you can use what you have learned in this book to tailor your classroom to meet the individual learning needs of your students. As with any of the suggestions in this book, start with one class or content area and expand to more as you become increasingly comfortable with the new teaching techniques.

CREATING INTERACTIVE ASSIGNMENTS

Interactive Learning and Its Benefits Defined

This book is designed so that each chapter builds on previous ones. You have learned how to build a virtual professional learning community, how to use Google Drive, how to utilize online resources, and then how to make flipped videos. This chapter will focus on the classroom portion of a flipped class, which involves interactive learning as opposed to passive learning when students listen while the teacher talks.

> The goal is to help move a student along the path toward deeper learning.

So what is an "interactive"? My definition is that it is any lesson where students receive continuous feedback from the teacher and/or other students in the classroom. As students work on the more difficult parts of a lesson, they can seek out peer and teacher assistance. Thus there is interaction with both other people as well as the content. Know, though, that feedback is not the same as giving out answers. The goal is to help move a student along the path toward deeper learning. This may involve reteaching, leading by questioning, or checking for understanding. It often involves some level of higher-thinking skills. So for example, an interactive could be a math problem set, an art project, writing an essay, or completing a group project such as a science experiment. Students who are working on these types of assignments benefit from having access to a teacher so that they can ask both simple and more complex questions. The key is that the teacher is interacting with the students and providing feedback right away, rather than a student's going home and becoming frustrated by being unable to complete an assignment without assistance.

Technology can be a useful tool for creating interactive assignments. Think about essay writing as an example. A teacher can give feedback right away by walking around the room from student to student or by using Google Drive documents to give feedback on student essays. For example, if the immediate goal is to write a thesis, then the teacher can make comments in students' Google Drive documents in real time while sitting at a desk in the classroom. This is actually quicker than walking around the classroom. Comments and edits made to Google Drive documents appear immediately, so students don't need to wait for feedback. This means you can quickly grade student work in class, insert comments when necessary, and even call students over when a student problem is best handled by a face-to-face conversation. Students who have worked ahead at their own pace can be available to help their peers.

As has been stated many times before, not all students learn the same way. One way to provide differentiation for students at different levels might be to ask your English Speakers of Other Language (ESOL) students to look up definitions for words that might seem basic to native speakers. As another example, not all students need to remain limited to the five-paragraph essay. If some students have mastered essay writing early in the year, challenge them to advance by requiring them to include more in-depth essays. The types of interactive assignments you assign after a flipped video are limitless. It should be noted that interactive work often involves higher-level thinking skills, and hence some students might need help (from teacher or peers) with the more difficult work.

Student Reading Levels

Your students will be reading a wide variety of material from textbooks to newspapers, websites, and so forth. To assume they can all read and comprehend at the same level would be a mistake. In the beginning of the year or semester, it would be a good idea to ascertain their reading levels by administering some sort of reading assessment. The reading assessment should be revised and readministered midway through the year to gauge the improvement students have made. ESOL students, for example, are most likely to miss questions on standardized tests not because they do not know the subject material but rather because they do not know the English vernacular used in the questions. To understand the reading levels of your students, you can use a number of free online assessments. One of these is Mind Sprinting. This test is fairly quick, free, and can be done in an hour. It will give you an approximate reading ability for each of your students at the beginning of the year. There are other tests available online, which you can find by doing a search for "free reading test."

Textbook Reading Levels

Now that you have a sense of your students' reading levels, you need to assess the lexile complexity of the class textbook and other class reading assignments. If your textbook or other reading assignments are in digital format, there are multiple ways you can find out the reading level (or lexile complexity). Lexile complexity is measured by various instruments. Some of these include Flesch-Kincaid, Gunning Fog Index, SMOG Index, Fry Readability Formula, and Coleman-Liau indices.

- The Readability Test Tool and the Juicy Test allow the user to input a URL and get an immediate level.
- But the definitive test is probably the one from R. M. Felder of NC State. When you run the test, it will tell you both the reading level of the text as well as the most appropriate age for the students who are to read it.
- Many textbooks' older versions can be found online, or at the very least you can try to go to Google Books or Amazon (since most textbooks have an e-copy of the first chapter online) and find a digital snippet that will help you assess the reading level.
- Another alternative is simply to Google something like "Flesch-Kincaid + textbook title." This should give you a score to let you know if the lexile complexity matches the reading level of most of your students. If necessary, type a few paragraphs of the reading

material into an online Flesch-Kincaid site to see what level of lexile complexity the instrument assigns to the text.

Learning Styles

In addition to displaying a span of reading levels, your students will also display an array of learning styles. One way to look at learning styles is through the Felder-Silverman model that breaks learning into five types: "auditory, abstract (intuitive), deductive, passive, and sequential" (Felder & Silverman, 1988, p. 680). The original 1988 Felder-Silverman paper that espoused the breakdown is one of the most cited models among academics, getting about 100,000 hits a year online (Felder & Silverman, 1988). Felder's web page has a plethora of articles you can read if you want to explore this topic in more depth. You can find the link on this book's list of links or by going to a search engine and typing in "Richard Felder Resources in Science and Engineering Education." For a good overview, check out the 1988 paper, where Richard Felder and Linda Silverman detail not only learning styles but also corresponding teaching methodologies that one might use in the classroom for each style. Felder and Silverman look at several "modes of learning," all of which advocate using student interactives rather than passive lecture to nurture intellectual development. The authors conclude that

- students prefer to receive information through "sights, sounds, insights, and hunches" as well as through "pictures, diagrams, graphs, demonstrations, words, and sounds" (Felder & Silverman, 1988, p. 675);
- students process information best through reflective activities or learning by doing; and
- students master understanding best through a step-by-step process or in a take-one-step-back-and-look-at-the-big-picture methodology.

Once you have assessed your students' reading levels, you can choose the corresponding teaching strategies that will best accommodate their learning. Felder and Silverman identify three learning modalities: visual, auditory, and kinesthetic. Essentially they argue that people best suited for auditory learning lose information when it is presented in only a visual format. In other words, auditory learners need to hear instructions or content information. Likewise, visual learners need to see pictures, diagrams, flow charts, and so on, to better learn and retain information. Given this information, think about how you can improve your presentations in class. Do you simply present slides that contain a lot of words, or

do you also include pictures and other visuals to highlight the information? What about audio files or video? You might use the 10–2 model for auditory learners, for example, so they can process their learning by listening. This is where the learner listens to a flipped video, for example, for ten minutes and then discusses the material. The student could work with the teacher or another student who is moving at the same speed and repeat the most important information, summarizing what has been said and how the information is connected to previously learned material (Fredericks, 2013). The key here is that you do not need to use the 10–2 method for every student. If you are using interactives, the students who do not need the 10–2 method can continue learning or use a different methodology.

Felder and Silverman (1988) argue that the kinesthetic learner needs to learn through active participation. Think about how well you have learned the content that you teach—this is largely due to the fact that you spent time devising lesson plans, finding supplementary documents, discussing the material with others—in short, learning kinesthetically. Keeping that in mind when you plan activities for your students, make sure you incorporate lessons that involve learning by doing.

> Felder and Silverman (1988) argue that the kinesthetic learner needs to learn through active participation.

None of us falls totally into one category or another. All learners will benefit if learning material is presented in a variety of formats rather than primarily in one.

Bloom's Taxonomy

Adapting your teaching to the individual needs of your students involves much more than simply listening to a child's preferences and adopting a lesson plan to please the student. Your more successful students are likely to be the ones who prefer the lecture and regurgitation methods of teaching. These are the students who have thrived in traditional methods of schooling. When asked, they will not want to change what works well for them. However, it may be that these students are not as successful at retaining information over long periods of time, or it may be that they can increase retention by being exposed to various teaching styles. Additionally, different approaches to learning will likely help students succeed when they are faced with more open-ended exercises where they are given some academic freedom that challenges their independent thinking.

Visit http://bit.ly/digitalclassroomteacherguide to access live links.

One of the hardest things to do as a teacher in the Internet age is to let go of the teaching methods that helped you as a student. Most teachers were good students and still enjoy learning—hence their career path. The longest-serving teachers tend to be the ones who are continually learning new content and rethinking their teaching strategies.

To help us consider different techniques we can use in the classroom, let us look at Bloom's taxonomy, which postulates that students must learn some basic knowledge. Then they have to be able to apply it in different ways, moving up an increasingly more thoughtful ladder of learning. Bloom's taxonomy was first proposed in 1956 and, more recently, was updated in 2000.

1956	2000	Simple Definition from the Bloom Wheel
Knowledge	Remember	This is simple memorizing—think definitions.
Comprehension	Understand	This would involve asking students questions to see if they learned basic concepts.
Application	Apply	Creating a demonstration, sculpture, illustration, presentation, interview, performance, etc.
Analysis	Analyze	Looking at documents, videos, books, Venn diagram, etc., and summarizing or coming up with main points.
Evaluation	Evaluate	Making a judgment based on something learned—set up a debate, blog, mind maps, etc.
Synthesis	Create	This happens when the student creates something entirely new from the learning such as a hypothesis, scientific experiment, a video, a journal entry from a different perspective, etc.

Google "Bloom's Digital Taxonomy Wheel and Knowledge Dimension" (see below) to find an even better representation of the depth of learning than the one shown above. This is the type of depth of learning that you should be exposing your students to each day. The website is an amazing online resource that shows you several strategies you can use in the classroom. When you click on a section, several methodologies will briefly appear in the chart (Edutechology, 2013). It will be a stupendous resource for you in your classroom and should definitely be added to your online bookmarks so you can refer to the site time and time again.
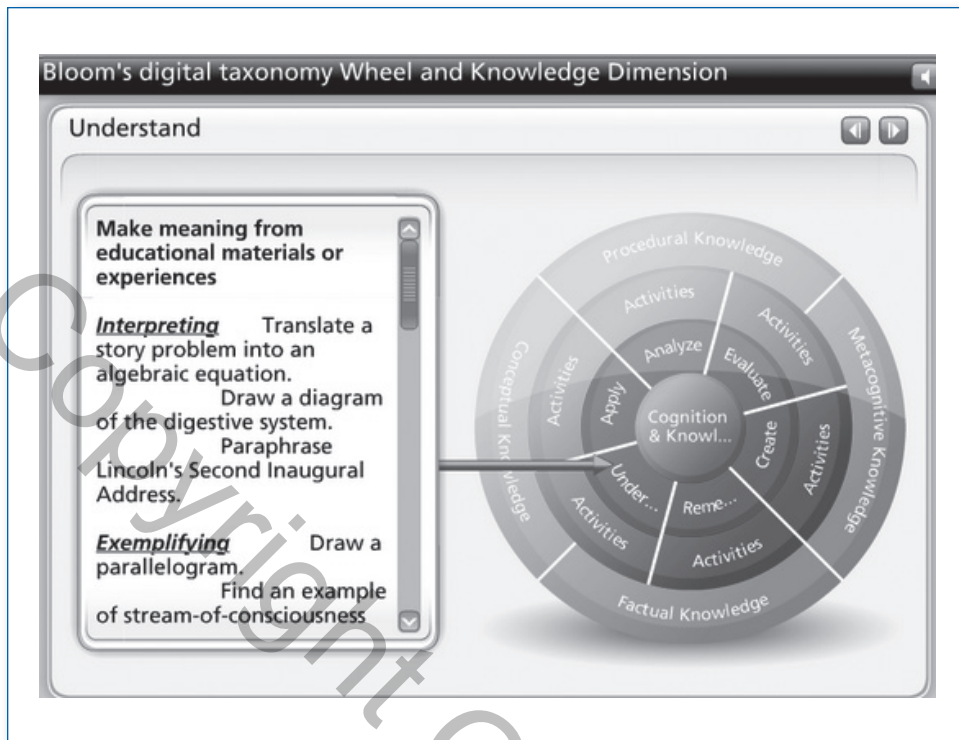
RESOURCES FOR CREATING INTERACTIVE ASSIGNMENTS

Fakebook, Faketweet, Faketext

One way to apply the upper levels of Bloom's is to consider using FakeTweet, FakeText, and Fakebook, which were put together by British teacher Russel Tarr (@russeltarr). They are a good alternative to assignments involving Twitter, Facebook, and real texting. Fakebook looks exactly like Facebook (and FakeTweet like Twitter, etc.) and will therefore be enticing to your students because of its familiarity. Asking students to summarize the learning material into short Fakebook posts or even shorter FakeTweet comments will require them to identify the essential elements of the content and, therefore, will necessitate synthesis.

You might ask your students to carry on a fictional conversation between authors on Fakebook discussing two novels you have read in class. Likewise, you could ask students to show you what a conversation between various scientists might look like.

Visit http://bit.ly/digitalclassroomteacherguide to access live links.

Fakebook will allow you and your students to create unique URLs and profiles without having to surrender any personal information.

- When you go the Fakebook page, there is a translucent overlay that shows you where items you are going to add should go. From there it is almost self-explanatory.
- To create a profile page on Fakebook, enter the name of the person where it says "Click here to enter name." The site will ask for a photo of the person. You can either upload a class photo, a student's self-portrait, or any other image of the student's choosing.
- You can then enter a post ("Add post," which is right below the image of your person) or a series of them. There is even a comment tab below each post. Likewise you can add famous historical figures and tag them as your Fakebook friends on the left side of the page. After entering in each of the names, their images will appear.
- Once the student has entered in all of the relevant information, go to the top right side and click "Save."
- The site will then ask for a code, which I tell my students to enter as their last name or the name of their school.
- The site will give the student a unique URL. You might suggest that the student put both the link and their password on a Google Drive document so it is not forgotten.

- Finally, you will notice there is a Fakebook how-to video in the middle of the screen on the website, in case you need more help.

As with the other applications and tools in this book, going to YouTube to search for a tutorial is an easy way to learn more if you need more help.

Free Textbook Resources Online

Online textbook materials are a great resource when you are creating interactive assignments for students. Most major textbook companies often offer review material online for their textbooks. Google the name of your textbook, adding "+ ancillaries" to the search. You may not find ancillaries for the current version of your textbook, but the learning materials will be a good start to providing online resources to your students. For example, you could include links to the online resources when you create student assignments. Often the ancillaries include useful summaries of the material you are studying. This means that you might have the students look at a map or a math problem tutorial from the ancillary. This could be built into your interactive assignment. Assuming you are using Google Drive documents, you could easily link the assignment to the ancillary. You might also find formative assessment quizzes, which students can take over and over until they master a subject. In your continued efforts to encourage your students to be self-paced, offer extra review materials to help those who aren't performing well on formative assessments.

Hippocampus

Another good resource is Hippocampus, which has e-textbooks for most standard high school classes at both the standard and AP levels including biology, chemistry, physics, earth science, economics, history, psychology, English, and religion. Their textbooks include video breakdowns of the subjects, are very professionally made, and, as with everything in this book, the site is free.

In some places, like chemistry, Hippocampus has been married to the Khan Academy so that you can look for your subject's accepted content and find a video to go with each topic. Likewise, in physics you also find an outline of the course with lectures, but there will also be "Physics in the Real World" videos, so your students can see real-life applications. So Hippocampus could be used either in a flipped classroom or as a way to tutor students who want more review.
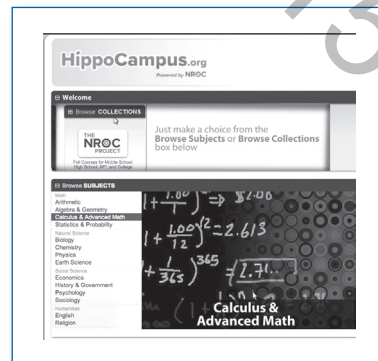
Wikipedia

Although some teachers discourage the use of Wikipedia in academic settings, one 2010 study queried 2,500 college students and found that almost every student started his or her research with Wikipedia. Wikipedia receives nineteen billion page views a month, making it the number-five hit website on the Internet (Grathwohl, 2011). Several studies have agreed that Wikipedia is very accurate including a well-known *Nature* magazine article in 2005 that found Wikipedia comparable in accuracy to *Encyclopedia Britannica* (Wolchover, 2011). What tends to scare educators regarding its accuracy is the fact that articles can be changed by anyone. On the other hand, there are 80,000 volunteers updating the site to make sure the information is correct ("Why Does Wikipedia Work?" 2014).

The more you explore Wikipedia, the more you will find it to be a useful addition to your classroom resources. You could use portions of a Wikipedia entry (include the link) to supplement your students' textbook so as to add more depth and nuance to a given topic. As you move from section to section in a Wikipedia entry, you will notice that the URL changes slightly. If you want your students to look only at a particular section, be sure to get the link for the exact location of that section. You can easily find the links by looking at the "Contents" right under the introductory summary. Click on one of the sections and you will see a new URL in your browser. For an example of an interactive assignment involving links to these sources, please see the end of this chapter under "Classroom Examples."

Interactive assignments are meant to be updated on a regular basis. No longer should you be tied to a static textbook, but rather the textbook should be only one of many resources you use—some of which might be a link to part of a Wikipedia article, a video from Hippocampus, a link to a section in an online textbook ancillary, an interview with an expert in a field, or any number of other resources. For example, recently I came across a short video comparing Schoolhouse Rock's "I'm Just a Bill on Capitol Hill" (Frishberg, 1975) to a smartly made video by the online news source Vox showing the way a bill really becomes a law (Posner, 2014). After watching the video, I went on Google Drive, found my interactive assignment on the topic, added in the "How a Bill Really Becomes Law: What Schoolhouse Rock Missed," as well as several questions on the new video, and in minutes, I had updated my assignment. In addition, I did not have to log into the school learning platform (something you will learn about in Chapter 6), delete the old assignment, and upload the new one because the platform contained the link to my online Google Drive assignment. Once I had updated my Google Drive document, the platform led

students to the updated assignment. Even better, I was able to make the update months before my students were to work on the lesson.

Create Your Own eBooks!

If your students have Apple devices, consider creating your own ebook with iBook Author. Just as I have outlined above, iBook allows you to create and constantly update your own "home grown" textbooks. This will allow you to tailor your own book to your specific needs. Think of it as a yearlong PLC challenge! Even better, have your students create books for themselves. This might sound a bit far-fetched, but if you want to see if students, working cooperatively, have learned a topic, creating a book might be a wonderful and engaging assessment of their learned knowledge. It would also allow for multiple modalities to be used to meet the learning needs of all readers. It could also be improved by students in subsequent years.

The iBook app comes complete with easy-to-build, premade templates. The app allows users to upload images, video, and text. Google "Apple iBook" to find a site explaining how to create your own book. The books are so easy to create that most elementary students can do it. On the Bloom's taxonomy chart, students' application of knowledge to create their own ebooks using multimedia sources would rank at the highest level. The only downside of iBook Author is that your students have to have an Apple device to create it.

RUBRICS

If you are going to use thoughtful, interactive assignments, you will need to develop rubrics to grade them. To ensure that the assessment process is transparent to your students from the get-go, they should be handed the rubric at the same time the assignment is given out. It is always helpful to go over the rubric with your students before they begin the assignment. The rubric should be the guide for students as they go about completing an assignment. As with any interactive, showing an example of a completed assignment is also helpful to serve as a model for students.

> It is always helpful to go over the rubric with your students before they begin the assignment.

You will be able to find many rubrics posted on the Internet. As with earlier learning in this book, if you need help, just go to Google and search for something like "art poster rubric" and see what comes up. You will

find not only rubrics in your search results but also assignments that fit that description.

A good tool for creating rubrics is the site <u>Rubistar</u>. You do not need to join Rubistar to use it. Go to the "Create a rubric" tab in the upper right hand corner to get started. Rubistar allows you to create your own rubrics simply by answering its questions. It also has rubric makers for every content area in education, so it is a place you may return to time and time again. Rubistar asks you to select a category and then asks you a series of questions using drop-down menus. When you have finished, you will have created a rubric that you can use for your students.

One last point to consider with using rubrics, like many other types of assignments, is how you define mastery. I often have my students share their assignments with me as they are progressing so they can receive feedback as they work on their projects. If you are operating in a self-paced environment, you can also have students make changes once the entire assignment is complete. If the goal is to learn, requiring that the students make suggested improvements is far more productive than accepting the submission of incomplete or inferior work.

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RUBISTAR
Create Rubrics for your Project-Based Learning Activities

Choose a Customizable Rubric Below:

Oral Projects	Products	Multimedia
Class Debate	Making A Brochure	Digital Storytelling
Historical Role Play	Making A Game	HyperStudio/Powerpoint Appearance and Content
Interview	Making A Map	Multimedia Project
Newscast - Presentation and Planning	Making A Poster	Scott County Digital Storytelling
Oral Presentation Rubric	Newspaper	Storyboard- multimedia
Puppet Show	Public Awareness Campaign	Video- Preproduction
Story Telling	Timeline	Web Site Design
Video - Talk Show	Writing a Musical	

Science	Research & Writing	Work Skills
Building A Structure	6+1 Trait Writing Model	Collaborative Work Skills
Lab Report	Book Jacket Report	Self-Evaluation of Participation

WHAT TO DO WHEN TECHNOLOGY DEVICES ARE LACKING IN YOUR SCHOOLS

If you do not have a set of laptops in your classroom, pair students who have smartphones or tablets with those who do not have them. Between 2011 and 2013, smartphone ownership climbed from 35 percent to 56 percent, with most of those not owning them falling in the senior citizen category. Seventy-nine percent of those in the 18 to 24 age bracket own one. Even in homes making less than $30,000 a year, fully 43 percent of the families have a smartphone (Smith, 2014). Fifty-one percent of high school students are bringing smart-phones to school, and fully 25 percent of all K–12 pupils have one with them in their schools (Cavanaugh, 2013). This doesn't even count those that bring iPods and other devices that have Internet accessibility. Indeed, these devices do not need a data plan to be connected to the

> Fifty-one percent of high school students are bringing smartphones to school, and fully 25 percent of all K–12 pupils have one with them in their schools.

school's free WiFi, which means parents can purchase smartphones with Internet capability, but they do not have to purchase the data plan.

The good news is that devices are becoming more affordable over time. We are starting to see more and more cloud-based laptops that are coming down in price. For example, Google's Chromebooks retail for $250 or less, and tablets such as the Kindle Fire or the Nexus series all sell for less than $300. Just as students have not minded bringing in smartphones to school, they will not mind doing so with their less expensive tablets and laptops. As pencil, paper, and notebooks have been a normal staple of what parents purchased for their children, tablets or web-based laptops will soon be expected as well. Over time, I have seen some parents of my students purchase Internet devices as a result of my class. It wasn't that the family could not afford the device, but rather than they didn't think it was necessary for school.

Until every student has an Internet-based device, however, find out where the nearest public libraries are and whether your community has youth centers where students can get online access to complete homework assignments. In the meantime, though, schools still need to provide devices for students, and teachers need to be flexible with their deadlines, depending on students' access to the Internet.

To see the links in this chapter, use your smartphone and the QR box below. Alternatively, you can go to http://bit.ly/digitalclassroomteacherguide if you prefer to use your laptop.

CLASSROOM EXAMPLES

Online textbooks come with lots of ancillaries. While you need to log into the book to see the text, you do not need to do so for the ancillaries. For example, my students' online textbook comes with maps, videos, assessments, and more. So in preparing a lesson I might ask my students to read two or three pages in the text; but then, using a Google Drive document, I also link to one of the textbook's maps. Since access to the maps does not require a login and password, the students can click on my link and easily view the map. When my students read about the Great Wall in China, for example, they can read the short description in our text and then look at the linked URL for a map from our ebook. I also have a link to a short Travel Channel video on viewing parts of the Great Wall that few people ever see. By curating a list of links onto a Google Drive document, I can use technology to combine the best of my online textbook with the best of web resources for a richer student interactive.

One of the ways we use online resources in my classroom is to prepare for second-chance tests. In my state, students who narrowly miss passing the state exam (defined as between 375 and 399, where 400 is passing) are given their scores broken down into six individual categories. I create a separate Google Drive document for each of the categories and then have each student work on improving his or her two lowest scores. On the review sheet, I include a very short review video as well as some new review questions that cover only the one particular area identified by the state examiners. You might also consider working with your PLC to cover the first- and second-chance assessments, both in terms of review as well as the assessments themselves. By maximizing their studying of their weakest areas of knowledge, students almost always pass the state exam on their second try. Compare this to the traditional method where students review all of the content covered by the exam for a second-chance test, even if they have already mastered parts of the material.

Rubrics help me even when I am not in the classroom. I often miss the last week of school to grade Advanced Placement exams, but I insist that my students receive the same rigor of instruction even though I am not in the classroom. This year I assigned an essay that explored the connections individual students have to foreign countries. This might mean looking at where their clothes are made, or talking to people in call centers in India, or perhaps researching the country where their parents were born, if one (or both) of their parents are immigrants. For the second part of the assignment, they were asked create an online presentation. The students were given a rubric for both parts of the assignment. We went over the rubric to ensure each student understood the requirements. Then, as each part of the assignment was completed, the students shared it with me via Google Drive. In the evenings, I provided feedback telling them what needed to be improved. They were able to receive feedback from me on how to improve their work (and many of them did), even though I was 2,000 miles away.

A great classroom example of an interactive assignment from outside my school involved one of my neighbor's children. She had been given an assignment to create a Fakebook page for a book she was reading. She was asked to create a page for the main character and then create "friends" for each of the other central characters. She then had to compose a series of conversations between the characters that demonstrated her understanding of the book and the interactions in it. This is a very creative and fun example of how teachers can combine the rigorous levels of Bloom's taxonomy while taking advantage of the new tools offered by the Internet.

EDUCATOR CHALLENGES

Monday Morning Challenge: Using Bloom's taxonomy and Rubistar, develop an interactive assignment that will help your students master some of the content you are covering in class.

Tuesday Morning Challenge: Identify a section of your textbook that does not adequately cover your standards. To supplement the text, provide students with a link to Wikipedia. Find the link(s) to the specific sections of the Wikipedia entry that will be most helpful for your students.

Wednesday Morning Challenge: To help students who have done poorly on an exam, be it the end-of-the-year review or some other significant exam, search Hippocampus to find a video that is targeted to a specific area of weakness. Create a review project based on that video (or videos).

Thursday Morning Challenge: Have a fellow teacher analyze one of your interactive assignments—perhaps one you are using with a flipped video. Ask the teacher to assess what levels of Bloom's taxonomy it covers. If you have missed some of the higher levels you were aiming for, retool your assignment.

Friday Morning Challenge: Give your students the outline of a unit or subunit and have them create an eTextbook collaboratively on Google Drive.

Twitter Hashtag Challenge: Share the link for one of your Google Drive interactive assignments on #individualizelearning.

Visit http://bit.ly/digitalclassroomteacherguide to access live links.