ADDING SOME TEC-VARIETY

100+ Activities for Motivating and Retaining Learners Online

CURTIS J. BONK ELAINE KHOO

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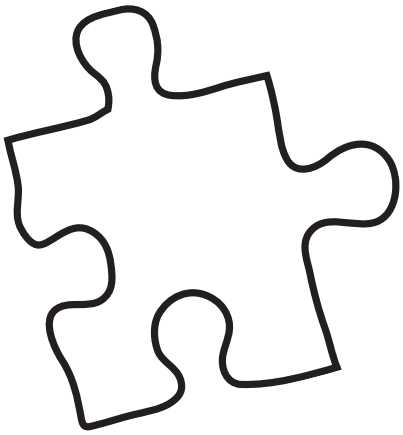
CHAPTER TEN

PRINCIPLE #7 INTERACTIVITY



(Includes Collaborative, Team-Based, and Community)

People enjoy the interaction on the Internet, and the feeling of belonging to a group that does something interesting: that's how some software projects are born.

—Linus Torvalds

Helen Keller once said, "Alone we can do so little; together we can do so much." Today the possibilities for working together have expanded to new heights. Social networking technologies such as LinkedIn and Twitter as well as collaborative tools like Google Docs and Wikispaces provide virtual avenues for rich collaboration among learners in different parts of the world. Students can basically pick their peers and learning partners. They can form teams and communities outside of those enrolled in their school or university, or employed in their work setting. As this happens, they have opportunities for sharing ideas, perspectives, and strategies that can result in unique course products and solutions.

Despite the expanding possibilities for online interaction and collaboration, interactivity in distance learning courses is difficult because there is a separation of time and place between learners and instructors (Willis, 1993). Online students are deemed to be at a distinct disadvantage as they lack the rich and sophisticated support systems that are typically available to on-site students (Hodgson, 1993). The physical distance shifts what

was previously a high-fidelity and synchronous learning event under the tutelage of an expert instructor into one that requires self-directed learning skills and heavy doses of perseverance and grit. Without a doubt, online learning is more flexible and convenient than traditional instruction.

Tony Bates (1991, 1995) argues that high-quality forms of interaction with the learning materials, other learners, and the instructor are essential for effective distance learning. Interactivity, however, comes in many formats and flavors. Such interaction can involve dialogue about the instructor's questions and answers; control over the pace, order, and timing of content; purposeful searching for and selection of additional information; manipulating the content or presentation in some way; and the selection of and navigation through different pieces of content (Moreno & Mayer, 2007). The dilemma for instructional designers, therefore, is to find ways to reduce extraneous cognitive load while increasing interactivity in ways that are more germane to the learning process (Maddrell, 2008).

As mentioned in Chapter Five, more than two decades ago Moore (1989) proposed three key types of interactivity: (1) learner interaction with content or the subject of study, (2) learner interaction with other learners with or without the instructor, and (3) learner interaction with an instructor or other experts assuming the role of instructor. As detailed in Activity #20 in Chapter Five, others have expanded on this model by exploring learner-self interaction that relates to learners reflecting on their own learning and new understandings as well as possible misconceptions or inaccuracies (Soo & Bonk, 1998). Still others have focused on learner-interface or learner-technology system forms of interaction (Hillman, Willis, & Gunawardena, 1994). In the next chapter we will focus on different types of learner-content and learner-technology system interaction (e.g., interactive timelines, glossaries, dictionaries, and so on), many of which are quite exciting.

In this chapter, much of our focus will be on learners interacting with other people. In fact, interactions with the instructor, expert guests, or practitioners in the workplace are critical in applying new knowledge. Learner interaction with practitioners or community leaders might be vastly different from their interaction with instructors and tutors. Practitioners may foster an apprenticeship to life in the real world. With global technologies, the possibilities for this form of interaction are endless and often fairly inexpensive and easy to incorporate. The 10 activities in this chapter will include such forms of interaction, but will also include many team- or peer-based collaboration examples.

Though the field is still evolving and filled with much debate and controversy, research has generally confirmed and extended Moore's ideas that interaction is vital to learner success across the various forms of distance education (Kelsey & D'souza, 2004). Research by Khoo, for instance, has revealed that when interactions are highly intellectual as well as social and emotional in nature, there is a better chance for a productive learning community to form online (Khoo & Forret, 2011; Khoo, Forret, & Cowie, 2010). Khoo and her colleagues found that in courses where peers extensively asked each other questions, elaborated on issues, and generally provided high levels of feedback, not too surprisingly, learners exhibited deeper reflection and discussion than those in courses that did not use these techniques. Interestingly, when students in these online courses delegated tasks and engaged in team-based communication and decision making focused on team products, they displayed a special type of social glue or group cohesiveness. Third, Khoo and her team also discovered a need for emotional support. The forms of such

support include addressing one another by name, asking about each another's welfare, and sharing a joke or humor in online activities. Clearly, online interaction is complex and multifaceted.

As Khoo's dissertation (2010) research revealed, all three forms of interaction—intellectual, social, and emotional—are crucial to the success of an online class. To create such courses, therefore, online instructors need to provide guidelines for interactions as well as carefully monitor the resulting class interactions and discussions. Suffice it to say, productive peer interaction depends on thoughtful use of online pedagogy (Khoo, 2005; Khoo & Cowie, 2011).

Fortunately, with more than two decades of Web-based education in the books, there are hundreds of Web-based pedagogical activities that have proven valuable for peer interaction and collaboration (Dennen, 2001). Among these instructional methods include press conferences, online symposia, panel discussions, and interactive role plays, or debates. Another technique that is often used is called the "critical friend" or Web buddy technique which we detailed in Activity 11 in Chapter Five (Bonk, Ehman, Hixon, & Yamagata-Lynch, 2002). Collaboration can also take place in cross-cultural wikibook projects or interactive Web conferencing (Lee & Bonk, 2013). Some of these activities will be discussed in this chapter.

The forms and instances of interactivity and collaboration, however, will vary by course level and the age or maturity of the students. Such key components of distance learning courses will also depend on the nature of the learning materials or contents, the instructional philosophy of the course designers, and the technology systems and tools employed in the course (Moore & Kearsley, 1996).

Technologies for Principle #7: Interactivity

Educational researchers and psychologists have been advocating a more sociocultural view of learning in technology-rich environments for decades. The key premise is that social interaction and dialogue is central to learning new skills and strategies (Bonk & King, 1998; Scott, Cole, & Engel, 1992). These skills first appear on a social plane with adults and more capable peers and are later internalized as independent problem-solving skills (Bonk & Cunningham, 1998). In fact, learner social negotiation of meaning is salient as it exposes learners to the unique skills and strategies of their peers and instructors. Technology-based collaboration allows learners to test the viability of personally constructed ideas as well as to internalize some of the skills displayed on the social plane.

Stanford Professor Roy Pea (1996) predicted that distributed learning environments would eventually transform education. He argued that such a transformation would take place when collective and collaborative learning communities emerge and become filled with highly interactive multimedia conversations. Pea was spot-on: think Facebook, Twitter, Course Networking, Piazza, Google+ Hangouts, and Ning. According to Pea, such technologies awaken educators to the overreliance on transmissive models of education and communication.

Clearly, a shift in educational models is overdue. A shift toward a more sociocultural view or perspective of education would emphasize the use of telecommunications to foster a sense of shared space or place for learners to participate as members of a learning community (Lave & Wenger, 1991; Schrage, 1990). As education has opened up during the past decade (Bonk, 2009c), a rich array of online resources and experts has been made available for learners to be apprenticed by more mature members of an online community (Collins, Brown, & Newman, 1989). At the same time, they can interact with other learners on a local or perhaps even a distinctively global cooperative learning team (Riel, 1996).

Pea was not speaking from thin air. Technologies for collaboration have existed for decades (Koschmann, 1996). Bonk and his colleagues—Padma Medury and Tom Reynolds—conducted an extended review of collaborative technologies back in the early 1990s (Bonk, Medury, & Reynolds, 1994). At that time, there were dozens of tools for synchronous and asynchronous writing and brainstorming. Back then, there were five levels of such tools that ranged from basic e-mail collaboration to what was labeled cooperative hypermedia. Each level was extensively researched at Indiana University during the 1990s (Bonk & King, 1998).

Fast-forward 20 years and the tools for collaboration and human-human interaction are once again in the limelight. As the proliferation of collaborative learning tools and resources occurs at an ever faster rate, educators are having difficulty keeping up. For those expecting students to collaboratively brainstorm, share, and negotiate knowledge, there are wiki tools like Wikispaces and PBworks mentioned in the previous chapter. Others might choose Google Docs or Meeting Words for document co-creation. To represent such knowledge, students could collaboratively build concept maps, glossaries, timelines, and hypermedia-based forms of representation. And for course content discussion and question-and-answer sessions, there is Piazza. Alternatively, for users of shared online videos, tools like Flipgrid and Vialogues can foster intense interaction around such videos. Of course, there are also many synchronous conferencing tools for learner interaction, including Skype, Google Hangouts, Adobe Connect, and Blackboard Collaborate. Many of these collaborative tools and systems will be central to one or more of the 10 activities of this chapter.

Each tool has specific features to take advantage of. For instance, one free social software tool, Loomio, enables discussion groups to be formed around topics or projects. As part of this system, members can vote and make decisions on ideas generated by the group through a user-friendly polling system (e.g., Yes, No, Abstain, Block). The results can be visualized instantly as a pie chart, allowing members to view the most popular idea options, thus informing the collective decision-making process of their group. Such features make it possible for an individual's ideas to be negotiated so members can share and learn from one another. As will be shown in this chapter, such types of collaborative technology can enrich learners' projects and products as well as their overall problem-solving processes.

Each of these tools can be used in local or global ways. Although educators are often well meaning in terms of infusing their courses with global issues and the development of multiple perspectives through cross-cultural, project-based approaches, most such activities are quite isolated events. As prominent global education consultant Jennifer Klein accurately points out, part of the problem is teacher training and part of it is a

lack of recognition by administrators and the surrounding community of the value of global forms of learning (Klein, 2012). Many educators merely lack awareness of just how pervasive and simple global collaborative technologies are today (Lindsay & Davis, 2013; Peters, 2009).

Whether you are in K–12, higher education, or corporate or military training settings, most kinds of collaboration that previously took place in walled classrooms can now happen effectively online. You have likely experienced the tremendous shift we have been witnessing during the past decade toward learning tools that are increasingly interactive and learning activities that are highly collaborative and enhance community building. Ideally, the following set of ideas will spark an idea or two in your brain that you might try out in your courses or with departmental colleagues or with others located in distant places across this planet.

Ten Online Activities in Principle #7: Interactivity

Even more than in previous chapters, the importance of peers is fully revealed in this chapter's 10 activities. Interactive and collaborative learning, especially in a global or international sense, has become much more common today than it was prior to the Web. Each activity detailed here can have a local classroom flavor of collaboration or entail something much more complex and global. If you seek the latter, be sure to set aside ample time to plan the event, negotiate the details, and reflect on the outcomes. And if it does not work, do not give up on the idea immediately. We find that a minor tweak can often lead to rich success.

Activity 61. Scholar, Scientist, or Innovator Role Play

Description and Purpose of Activity. Educators have experimented with forms of online role play for nearly two decades. Personally, we have attempted to stretch our risk muscle with online mock trials and séances. We have also incorporated various forms of role play including student assignments by type of occupation (e.g., real estate agent, teacher, corporate executive, politician, and so on), personality type (e.g., optimist, pessimist, sage, comic, slacker, leader, coach, and so forth), online activity or role (summarizer, starter, devil's advocate, questioner, and the like), level of thinking and questioning (such as knowledge or basic facts, comprehension, synthesis, evaluation or judgment), and types of commenting expected. For instance, you could assign every person in your class a different personality or role. Alternatively, you could juggle a few select roles among several students and allow the others to assume any position or role that remains open.

We have conducted online role plays many times. We have also assigned students the names of famous people to assume during that role play such as Mother Teresa, Jacques Cousteau, the Dalai Lama, Dian Fossey, Eva Perón, Stephen Biko, Ernest Hemingway,

or Anna Freud. As indicated in the previous chapter, such a task can elevate student perspective taking and level of thinking (Sugar & Bonk, 1998). There are countless ways to engage students in the content using online role play. Fortunately, the tools for doing so are becoming increasingly sophisticated and available. For example, next-generation collaborative tools for online learning environments, such as Piazza and Course Networking, both described later in this chapter, could be used for online role play.

Students should be given specific tasks or problems to discuss within such roles. In our education and technology courses, these problems often relate to school reform, some new law that was proposed or recently passed, or the costs of purchasing new technology (e.g., iPads). Embedding specific problems and events around the role-play activity encourages students to comprehend the dynamic nature of the surrounding educational system or political climate. They can begin to grasp the viewpoints of different stakeholders who are concerned with the costs, traditions, achievement test scores, or other impacts. Instead of a one-off course task, you could create a series of assignments that are recursively embedded to foster systemic ways of thinking about such problems.

In other courses, students may be discussing and debating the causes and implications of a recent catastrophe or event in the news (e.g., South Korea's renewed whaling plans, a series of European monetary bailouts for Greece, or bloody violence in Syria or Egypt). In typical online role-play situations, students would contribute to the discussion based on an assigned personality type, occupation, thinking level, experience level, task, or skill. If the role-play situation calls for each student to assume the personality or experience level of a particular person, learners will be obliged to research their assigned person and his or her domain area in order to be successful during the event.

One idea we extensively use is called "scholarly role play." In scholarly role play, we have our students assume the voice of someone whose articles, books, or press clippings they have read during the semester, or whom the class has discussed, watched, explored, or referenced. They must enter all posts and responses from that specific role or point of view.

Alternatively, they could engage in a "scientific role play" where students would assume the personas of leading scientists and engineers making particular breakthroughs or coming up with one or more inventions (e.g., Edison, Tesla, Lovelace, Marconi, Curie, Bell, and Ford). Again, they would have to research their assigned person and his or her invention or innovation prior to any online discussion and interaction with peers.

Skills and Objectives. Includes creative imagination, spontaneity, application of skills learned, appreciation of other viewpoints, discovery and exploratory learning, problem solving, and flexible application of learned concepts and principles. Scholarly and scientific role play breaks learners out of their present mindset and requires them to envision a situation from another perspective.

Advice and Ideas. Carefully plan the role-play task or activity. Be clear on the roles or tasks, the types and timing of interactions, grading criteria, and other expectations. Offer plenty of options. At some point during the activity, you will need to explain the purpose as some students may find online role play highly frivolous or insignificant to their completion of the course or overall program of studies. In some cases, the explanation of the purpose should take place prior to starting the assignment, whereas sometimes it may need to wait until the very end.

If training is required for different roles, then offer it. Provide instructional scaffolds such as a list of relevant Web resources for the roles that students will be playing. Consider allowing students to pick the scholar or scientist that they will role-play. If necessary, find a way to "enroll" those individuals into your course management system or discussion forum tool. Role assignment from lists of those fictitiously enrolled might be random, purposeful, or student selected.

As an example, Bonk has experimented with role plays of pioneers in the field of open source software. Using a blended learning format, students research their characters online and come to a physical classroom for the role-play experience. The role-play activity is held as a mini-institute or one-day conference event attended by the famous open source developers, educators, and advocates that the students were assigned. In fully online classes, Bonk uses a combination of synchronous chats with asynchronous discussion activities for the same activity. Such combinations tend to yield highly rich and creative interactions.

Online role play is possible in most any field. Those teaching courses on computer technology, engineering, or entrepreneurship might enroll people like Steve Jobs, Steve Wozniak, Bill Gates, Michael Dell, Sir Tim Berners-Lee, William Burroughs, Mark Zuckerberg, Linus Torvalds, Sergey Brin, and William Hewlett. Alternatively, such instructors might focus on women of the Silicon Valley such as Marissa Mayer, president and CEO of Yahoo!, Pooja Sankar of Piazza, and Meg Whitman, president and CEO of Hewlett-Packard (Shontell, 2012). Fortunately, there are websites emerging like Women 2.0 and ForbesWoman (Chang, 2012; Swartz, 2012) where students can read about such individuals (Sankar, 2011). After role-playing innovators, entrepreneurs, or scientists, there could be a follow-up assignment wherein students envision their own companies, products, and business plans.

Instructors have much to keep track of during the role-play experience. For instance, they should facilitate the online role play with questions, management guidelines, tips, task-structuring cues, and timely reminders to participate. Course instructors should also be alert to ways that they could address any conflicts between assigned roles and student personal viewpoints or opinions. Once the assignment is over, students could write reflection papers or engage in some type of summary assignment. In addition, episodes of debriefing and group discussion regarding the role play will reinforce and extend that learning.

Variations and Extensions. As in the online role play and séance activities mentioned in Chapter Seven, students can conduct extensive research on their assigned people, perhaps reading biographies, watching movies about their lives, or reading about their primary work done prior to becoming famous. In addition, if students' assigned people are still alive, they could write to them with a set of questions or ask for new research findings, reports, or ideas. They might even invite their scholar or scientist to join the class in a synchronous conferencing session. If successful, instructors could offer bonus points or some other type of award or recognition. The invited person could even enter the course role play and contribute to it. The possibilities are endless.

Key Instructional Considerations

Risk index: High
Time index: Medium
Cost index: Low
Learner-centered index: High
Duration of the learning activity: 1–2 weeks

Activity 62. Interactive Learner Questioning and Discussion

Description and Purpose of Activity. In online courses, much of the learning takes place in the course discussion forums. Recently, however, there is an emphasis on student questioning and responding within those discussions. In the Stanford Mobile Inquiry Learning Environment (SMILE) project, for instance, learners can type content-related questions that are distributed via their mobile phones for their peers to answer (Seol, 2012). All student-generated questions are collected and instantly made available to the class. Students can add multimedia elements such as photos of certain diagrams found in their textbooks or notes from key lectures to include with their questions. Using the SMILE system, students can also rate inquiries based on their perceived relative merit.

The developer of SMILE and founder of Seeds of Empowerment (which is testing SMILE), is technology maverick Professor Paul Kim from Stanford. According to Paul (personal communication, July 8, 2012), "Our ultimate goal is to bring about a *seismic pedagogical paradigm shift* in classrooms around the globe. While we recognize that technology can never—and should never—replace teachers, we do believe that technology can empower students to take their learning into their own hands, and make them active agents of their own learning." Paul has tested SMILE in remote and urban communities in India, Tanzania, Argentina, Indonesia, and Thailand with stunning results (Buckner & Kim, 2013).

Another interesting Web 2.0 tool for interactive questioning is Piazza. Piazza is currently a free service employed in higher education settings. In fact, many professors shift their physical office hours to the Web using Piazza and others use it to help students form study groups (Young, 2012). Importantly, learners can choose to be anonymous in Piazza, thereby freeing them up for participation. The nonhierarchical and interactive functionality of Piazza nurtures an environment rich with student questions and associated answers (Qasem, 2012). Answers to student questions can arrive in minutes, or even seconds. Moreover, using Piazza, previously shy students can participate anonymously as well as find answers to questions that they may be hesitant to ask despite the anonymity.

Among the users of Piazza are entire MBA programs as well as professors of topics like Computational Fluid Dynamics, Linear Algebra, Contemporary Civilization, Introductory Chemistry, Engineering Entrepreneurship, and Introductory Computer Programming. In a software engineering course, Jeff Offutt of George Mason University used Piazza with his students as well as those from two universities in Sweden. By incorporating cross-institutional collaboration, Offutt was assured of sufficient diversity in student backgrounds, perspectives, and answers. In this course, students paired off

into teams to review research papers each week. After that, they led discussions about the research in Piazza. Moreover, in this highly ingenious activity, a third student was assigned the role of dissenter who was required to disagree with the conclusions of the other two students who drafted the summary.

Students ended the course with an online miniconference of student research paper presentations between students in the United States and those in Sweden. Their research designs were posted and discussed within Piazza prior to the conference. As a result, the discussions were at a deeper and higher level than those experienced previously.

Piazza and SMILE are not alone. In fact, many new course tools and social networking systems (e.g., Course Networking and Canvas) are taking on flavors of tools like Facebook by having students post questions on a wall for others to answer. Given their familiarity with Facebook, such systems are relatively easy for students to adapt to.

Skills and Objectives. Includes discussion skills, formulating questions, inquiry, choice, feedback, empowerment, idea exchange, appreciating different perspectives, analysis, resource sharing, and evaluation and analysis skills. Through this activity, learners pool together their knowledge.

Advice and Ideas. This instructional approach and the tools employed may be unfamiliar to students. They may not be used to such challenge questions coming from their peers. If that is the case, create tutorials around the system that you have chosen to use. For F2F classes, consider taking students to a computer lab for a demonstration as well as to test out their passwords. Otherwise, create help systems, screencast videos, or other types of tutorials.

Instructors and their assistants should participate in the question-and-answer sessions. Instructor modeling will foster more intense student participation. To fuel discussion even further, you could acknowledge the more active students with special certificates, praise, bonus points, or some other type of course credential. Course Networking, for instance, offers motivational incentives in the form of "pomegranate" points.

Be sure to structure the task. Indicate how often and how much to post as well as how students will be assessed. It is also helpful to provide examples of the types of postings that are expected. If you do, emphasize making substantive postings rather than, for example, simply stating, "I agree with Sheryl and Jay." Monitor the system. If anything mentioned is incorrect, intervene in a timely and appropriate fashion with the correct answer. Extend student answers with additional resources.

Variations and Extensions. Ask students to sift through the question-and-answer pool and generate themes or metaquestions. Ambitious students or teams could enter sample content into a qualitative research tool for in-depth analyses. The metaquestions uncovered may be listed at the start of the following semesters. Students could also create a wiki of frequently asked questions (FAQs), which can evolve over time. The most common ones could be used as a filter or lens from which to update the course syllabus, exams, and course resources; naturally, such questions are indicators of what students consider important. Use them as a guide in course redesign when possible.

Key Instructional Considerations

Risk index: Medium
Time index: High
Cost index: Low
Learner-centered index: High
Duration of the learning activity: Every week

Activity 63. Jigsaw the Online Content

Description and Purpose of Activity. The jigsaw method has its roots at the University of Texas at Austin where it was designed by Elliot Aronson. Though is it more common in K–12 classrooms, we have used it in higher education settings and at various corporate and military training events.

There are many components to the jigsaw method. At base level, groups are formed and each student in a group is assigned a different task or area of study. Students then find ways to obtain the needed expertise. Next, they break out into temporary expert groups with students from the other teams who have been assigned the same role or purpose. At that point, students study, learn, rehearse, question, negotiate, and share content with other members of their expert group. At some point, students move back to their home or jigsaw groups and share their new knowledge. There could be an ending quiz, presentation, game, or some other type of capstone event to summarize what was learned.

The prevailing literature is filled with various K–12 applications of the Jigsaw approach, but we have employed the jigsaw method in F2F, blended, and fully online college courses. For example, in the late 1990s, Bonk apportioned a 10-chapter book by David Perkins called *Smart Schools* (Perkins, 1992) to small teams of five students each. The first student in the group was assigned to become an expert on the content in chapters 1 and 2. The second student was told to master chapters 3 and 4. The third student had to learn chapters 5 and 6, and so on. In the online version of this course, students discussed their respective chapters in expert groups, so that all the students reading chapters 1 and 2 discussed and summarized that content in a specific discussion thread for those chapters.

Once that was complete, students engaged in synchronous chats as well as asynchronous discussions with other team members about the content in their assigned task. Today they would place that knowledge in a wiki or collaborative document specific to their group. In blended courses with final class meetings, there can be a series of final presentations as well as group papers. The presentations offer a sense of completion, camaraderie, and community. Such a method is even more efficient with the rise of digital books. Some digital books have built-in tools for sharing, commenting, and discussion among those reading that particular book.

Skills and Objectives. Includes teamwork, group interaction, knowledge negotiation, communication skills, interpersonal skills, and learning depth. There is a sense of identity or self-worth from this task.

Advice and Ideas. The Jigsaw method can require extensive planning, especially in online and blended courses. When properly detailed, however, there are numerous benefits. For example, the jigsaw method will bring out a sense of commitment from students. It will also efficiently utilize student resources in the course. As a result, instructors can

cover more material at a faster pace than with most other instructional methods. At the same time, the students are forced to learn the content in a deeper and richer manner than most traditional approaches allow. Coordinating the Jigsaw method is not easy, however.

As is clear by now, the Web is filled with rich digital content. Assume that the instructor had 20 students and one or more key topics that she wanted to end her course with. Students could be divided into groups of four people and assigned to learn from different Web resources, shared online videos, simulations, biographies, open access articles, digital books, blogs, and podcasts related to such content or topics. For example, one person could be required to find expert blogs on a topic, a second group member could be charged with researching one or two central people in the field, the third person could be asked to listen to relevant podcasts, and the fourth person could watch dozens of online video resources that are available on that topic. In addition, they could all read a particular book or set of articles for background materials. Those individuals reading blogs could correspond with each other in a discussion thread, as could students with the podcast, video, and biography assignments.

Clearly, there are many possible spin-offs of this technique. For instance, some parts of jigsaw might be abbreviated or eliminated as needed. Experiment and see what works. What is certain, however, is that online course contents will continue to proliferate. Methods like jigsaw will help students make sense of them.

Variations and Extensions. There are many variations as to what students may turn in at the end of a jigsaw activity involving the analysis of a book or report. For instance, groups could present their summary of the book in a synchronous Web conferencing presentation. Alternatively, they may write a group report or create a video summary of their learning. Students take pride in the fact that they have contributed something beneficial to their group.

Instructors who are open to global collaboration could establish jigsaw student groups across sections of the course or across different institutions. Their cross-institutional or global activities might be posted to a wiki and discussed in a social networking community like Ning.

Key Instructional Considerations

Risk index: Medium
Time index: High
Cost index: Low
Learner-centered index: High
Duration of the learning activity: 2–4 weeks or as needed

Activity 64. Flipping the Class

Description and Purpose of Activity. Paralleling the growth of methods of delivering educational content since the emergence of the Web, there has been increased interest and experimentation in ways to transform traditional processes of teacher-centered instruction. Ideas stretching back hundreds of years about learner-centered instruction are now quite salient. Strained educational budgets, improved learning technologies,

the availability of high-quality online content at low or no cost, a wealth of insights from cognitive psychologists on how people learn, and increased pedagogical experimentation have uniquely converged to alter the discussion about the best ways to deliver education (Berrett, 2012).

As these changes take place, new terms and ideas are coined to help people make sense of them. One such term is the notion of the flipped classroom. In a flipped classroom, students watch a video lecture or listen to a podcast of that lecture prior to coming to class. During class time, then, instructors can create a learning-centered environment rich with problem solving, reflection, and student interaction. Different types and forms of interaction can occur before, during, and after class. Students can be asked to comment on specific components or sections of the assigned video or audio file. Alternatively, all learners could view, listen to, or scan through each assigned resource prior to class but with different tasks or responsibilities. They could later follow up by sharing their observations in the F2F class or posting them to an online forum.

Some educators believe that flipping the classroom occurs solely when video lectures or podcasts are posted to the Web. That is not always the case (Sams & Bennett, 2012). A flipped classroom requires rethinking the entire educational environment and ceding more responsibility to the learners. Naturally, in many cases, this flipping may entail learners watching a series of video-based lectures (e.g., the Khan Academy) in their homes, offices, cafés, or hotel rooms. In other cases, it may entail reading the assigned chapters or articles and writing down associated questions and problems before they come to class.

The flipping does not just appear where and when the learning occurs. More importantly, this flipping is apparent when instruction shifts from whole-group or instructor-centered situations toward individualization of learning (Makice, 2012). As the flipped classroom proliferates in education, active learning and peer collaboration replace the passive instructor- and text-centered past.

As an example of active learning with technology, you might visit TED Ed, a spin-off from the now famous TED talk series (Byrne, 2012a). As the name implies, this video portal was created specifically for educational purposes. Multiple choice and short answer questions about a TED Ed video can be answered by students during or after viewing the video. By customizing lessons with TED Ed, teachers can flip the classroom and place students more in control of their own learning.

TED Ed offers quiz questions with immediate scoring and video hints for the ones they get wrong. In addition, there are open-ended questions and supplemental resources to explore. Teachers can edit the title, provide instructional context, select or deselect any quiz questions, and add additional reflection questions and resources. When done, a unique video URL can be shared with a class. Importantly, with this privately shared Web resource, instructors can track student progress. At the present time, instructors can perform these tasks with any TED talk, TED Ed video, or YouTube video. Stated another way, much flipping is now possible.

As should be apparent by now, shared online videos do not replace teachers. Online simulations do not replace teachers. And interactive digital books do not replace teachers. The role of the teacher is much more complex than many of those advocating posting video instruction to the Web would suggest, especially given that learners may not be

used to being in charge of their own learning situation. Individualized and personalized instruction may be the ultimate goal of education, but such individualization requires deeply committed, caring, knowledgeable, and risk-taking instructors or mentors who are comfortable giving up some control over the delivery and timing of the content.

So far the news on flipped classrooms is somewhat positive. Students in introductory calculus courses at University of Michigan, for instance, exhibited twice the gains of those in traditional classrooms (Berrett, 2012). Similar gains have been found in physics courses at Indiana University and Harvard. And, as shown in Activity #51 in the previous chapter, flipping the class is popular in medical schools where lectures, cases, and other content can be placed online for students to explore and perhaps make diagnoses before a physical class session. They might, in fact, be selected purposefully so as to place medical school students in a state of bewilderment prior to class, thereby making them more attentive to instructor insights (Minenko, 2012).

Skills and Objectives. Includes choice, engagement, communication skills, self-directed learning, self-confidence, collaboration, and addressing misconceptions. One key result should be student ability to ask questions as well as solve problems in the field. Other goals include higher levels of attendance, increased student satisfaction, and elevated test scores.

Advice and Ideas. Flipping the classroom is a controversial topic. In fact, there have been heated debates for what seems like eons about the degree to which students should take more control over their own learning as well as what the role of the instructor and other experts will look like in that process (Berrett, 2012). We recommend that you think about what content is available to you to change your classroom structures. Are there online articles or books that students can all access inexpensively or for free? Would a set of lectures on critical topics in your field enable you to change the focus of any F2F sessions or synchronous Webinars? Technologies like Camtasia, Elluminate, Adobe Connect, Mediasite, Echo360, or just a simple Webcam on a laptop can help you create such video lectures. Find out what is available within your organization or institution.

Perhaps you only want to post audio files as a form of flipping. If that is the case, you might podcast your lectures, as has been done at the School of Dentistry at the University of Michigan. You could also digitize all your pictures, charts, graphs, and handouts for your students. We recommend that you explore the Web for at least one or two hours to determine if there are professionally produced cases or scenarios that you and your students can access. We also suggest that if the course has a F2F component, you might request a room in which the desks are not bolted down and where there is ample marker board space and projection units for learners to share their ideas. If the room assigned is not conducive to learner-centered instruction, consider the use of other spaces like hallways, outdoor classrooms, computer laboratories, and conference rooms. There may even be a "classroom of the future" that has been designed for your school, college campus, or executive training center that is just waiting to be put to work.

With this method, and many others in this book, you are changing the layout of the learning environment. You are shifting the ways in which students learn, the timing and delivery of that learning, and the ways in which that learning is assessed. Once again, when done, debrief on the purpose and effectiveness of the method.

Variations and Extensions. Consider "flipping" across two or more sections of the same course. To help students acquire basic knowledge, instructors might pose term-related competitions or challenges. For higher-end learning, they could structure cross-classroom or cross-institutional projects. Students in the flipped classroom(s) may have more time for global projects and presentations (Bergmann & Sams, 2012). Such internationalized courses are ripe for a student-directed approach to learning.

Another idea would be for students to spend the first four or five weeks or meetings of the class creating the podcasts, Webcasts, video lectures, and digital book material that the entire class would study and learn from during the remaining weeks of the course. This is definitely a high-risk strategy. However, we have seen it work at Old Dominion University where students in Professor Dwight Allen's Social and Cultural Foundations of Education course wrote book chapters in a wiki during the first month of the term and then read the chapters of their peers in remaining weeks of the course, instead of an expensive textbook (O'Shea, Baker, Allen, Curry-Corcoran, & Allen, 2007). Ask yourself: is there a little Dwight Allen in you?

Key Instructional Considerations

Risk index: High
Time index: High
Cost index: Medium
Learner-centered index: High
Duration of the learning activity: Every week or as needed

Activity 65. Product Brainstorming and Co-Creation

Description and Purpose of Activity. As indicated in the previous activity, we live in transformative educational times. In this unique learning age, every day brings a fresh technology tool or Web resource to explore that offers learners a chance to co-create knowledge not only within a class but with peers around the world (Lindsay & Davis, 2013). Instead of passively receiving knowledge from instructors and books, students can offer their own insights, ideas, and suggestions. Most learners, whether young or old, have rich prior experiences that they can offer to a class or project. The art of teaching is finding ways to pull it out in a manner that allows the learner to feel that it was his or her personal decision to contribute that knowledge, story, or insight.

In our own classes, we have been experimenting with many tools, resources, and pedagogical ideas for learner product creation. Sometimes, we arrange for virtual teams of students to contribute to an expanding knowledge base on a topic. Other times, we have pairs of students from two different universities act as a team to solve case problems or situations. And on occasion, we have students sign up to write a chapter in a wikibook that continues to evolve from year to year.

Fortunately, there is a wide array of collaborative technology on the Web for learners to jointly create, share, and negotiate knowledge. For instance, there are tools for joint document and database creation like Google Docs. Learners can also brainstorm ideas with simple yet robust resources like Meeting Words and PiratePad. With Meeting Words,

every contribution is in a different color of text. Alternatively, learners could monitor projects or resources in a wiki. Given the wealth of tools at our disposal, instructors could have students rotate from one tool to another as they work their way through a particular problem-solving approach; in the process, students learn valuable digital literacy skills.

Skills and Objectives. Includes creative expression and insight, knowledge construction and negotiation, the appreciation of multiple perspectives, student-generated or participatory learning, collaboration, interaction, the application of course concepts and ideas, problem-based learning, and decision making. Many such skills are not found in traditional course syllabi.

Advice and Ideas. Brainstorm ideas for products that your students might co-create (e.g., podcast shows, mobile applications, video documentaries, multimedia glossaries, and the like). Discuss your ideas with local and distant colleagues. Talk to former students and ask what tasks they might have preferred in terms of generating and sharing knowledge. Share these insights with current or prospective students. What would they like to co-create with their peers? List some options but have current or future students extend them. Following are a few ideas of what students might jointly create in a wiki or some other tool:

- Strategic planning documents
- Wikibook chapters or a complete e-book
- Outline for a paper or project
- Course review quiz generation
- How-to videos, help pages, and tutorials (e.g., screencasts of how to use a piece of technology or how to perform a particular task)
- Engaging stories or narratives about some topic related to the course
- Class glossaries, study guides, or help books
- Databases of course articles and resources
- Course homepage, Facebook fan page, or Ning group
- Course identity—slogan, video overview, documentary, and so on

Perhaps attempt a pilot or small-scale version of the project before you start a major undertaking. We recommend that you solicit feedback on how well it went. When the project is completed, be sure that the students are given ample feedback and outlets to disseminate their work. In addition to feedback, there should be recognitions and celebrations. Celebrations could include showcases of student work, one-day institutes and summits to present projects in a conference-style format, video recordings of any presentations, certificates of achievement, award ceremonies, and retrospective roundtables and panel discussions (Lindsay & Davis, 2013). Think such rewards are only effective at the K–12 level? We have offered graduate students certificates of completion, personally signed books, and other recognitions when they design outstanding or highly creative course products. Unsolicited student feedback indicates that such rewards are extremely effective.

Variations and Extensions. Put the brainstormed list of co-creation ideas in a wiki. Ask previous students to add to that list. Former students could also serve as course mentors and tutors for current student projects or as project evaluators and knowledge disseminators. In fact, alumni of the course might sign up for one of the following roles: creative brainstormer, tutor/mentor, project evaluator, feedback giver, judge, knowledge disseminator, social networker, and so forth. Consider giving your support people and instructional assistants a certificate or badge for their service.

Key Instructional Considerations

Risk index: High
Time index: High
Cost index: Low to High (depending on resources required)
Learner-centered index: High
Duration of the learning activity: 2–5 weeks, typically at or near the end of the course

Activity 66. Collaborative Mind Mapping and Idea Visualization

Description and Purpose of Activity. Cognitive psychology has taught us that among the most important skills learners can have is the ability to organize and represent their knowledge in personally meaningful ways (Driscoll, 2005). For example, instructors could assign students to create concept or mind maps of a set number of chapters of a textbook. Student linkages between terms and their depictions of causal relationships would be key indicators of what they have learned from a lesson or unit. Putting their knowledge on display for others to observe and comment on forces thoughtful examination of conceptual understandings. Students must think about the causal connections, key ideas (i.e., macropropositions), secondary or less important information (i.e., micropropositions), and the coherence and completeness of the overarching structure.

For most of the 1990s, educators bemoaned the lack of technology for knowledge representation and visualization. Around 2005, a series of concept mapping and mind mapping tools became popular including Gliffy and Bubbl.us. However, most early concept mapping tools for the Web offered text-only options. Over time, these tools gradually evolved to allow users to insert pictures as well as links to external documents, videos, animations, and other media. Popplet is one such tool for idea visualization that is popular with educators. In educational settings, a learner could embed links to articles read in a Popplet for instructors and peers to browse through. There are now very rich and engaging multimedia and hypermedia components to online knowledge representations. And by using Popplet, they can be shared with colleagues and peers who can help in expanding them even further. Such tools operate the way the brain works. In fact, one such tool is called The Brain.

As these systems have evolved, they have offered increasing opportunities for team collaboration. Examples here include Mindomo, MindMeister, Creately, Comapping, and Webspiration. In the case of Comapping, learners can collaborate in a virtual student lounge where notes, links, and files can be shared in real time. As is the theme of this chapter and the next, these systems foster learner interaction and engagement. Without

a doubt, we now live in a world of collaborative knowledge building and representation. What was once a solitary effort is now group-based and displayed in real time. There has never been an age like the present one.

Skills and Objectives. Includes reflection, clarifying relationships, concept review, juxtaposing ideas, prioritization, sharing knowledge, knowledge integration, critical analysis and evaluation skills, visual communication, and term or chapter review. Explaining what one has designed can provide further knowledge gains and interconnections.

Advice and Ideas. Test out at least a few of the many tools for mind mapping and collaborative knowledge building (see Web resources associated with this chapter). Each tool or system you discover for online collaboration and idea visualization will have different purposes. Some might be better for brainstorming, others for project planning, and still others for knowledge representation and decision making. Fortunately, many are free (Byrne, 2011). Select the one that looks most promising. Perhaps ask several former students or student assistants to test the tool out before creating an assignment using it, or try to use it for a personally important task before incorporating it into your online and blended courses. In that way, you will be able to empathize with your students should they experience difficulties with the tool features or overall project.

Be clear about the task. Instructors should indicate the number of concept or mind maps required, the multimedia elements expected to be embedded, the breadth of terminology covered, the size of project teams, the assessment criteria, and length of time for any associated presentations. Assemble outstanding work in a project gallery and include student testimonials about the assignment as well.

Students could be paired or assigned to groups by interest area, level of expertise, or prior experience and background. Each student team might be assigned a different chapter, unit, topic, issue, and so forth, to generate a multimedia knowledge structure. Consider assigning points for student presentations of their projects, especially if it is a blended course. There could be recognitions for uniqueness, diversity of media employed, logical flow and rationality, and persuasiveness.

Variations and Extensions. Consider asking students to build collaborative knowledge maps across disciplines. For instance, students in MBA programs, informatics, and computer sciences might use the concept maps as planning documents for jointly created business plans and technical reports. Many of the concept and mind mapping tools mentioned here are used in the business world. Hence, such an activity would be beneficial on many levels. Be sure to showcase the best of these efforts in a project gallery.

Key Instructional Considerations

Risk index: Medium
Time index: High
Cost index: Low
Learner-centered index: High
Duration of the learning activity: 2–4 weeks

Activity 67. Collaborative Video Annotations

Description and Purpose of Activity. Classroom discussions can be rich and deeply engaging. Unfortunately, topics that some students feel are worthwhile and engaging can be the same ones that others feel trail off on a tangent. Similarly, video can be extremely static and boring and just another talking head—or it can stir a passion in students to want to learn more. What if students were actively engaged and doing something while watching a video? What if their conversations had a video to focus them? Collaborative video annotations allow learners the time and space to participate to the fullest on the topics that they feel are important (Howard, 2011).

Using annotations as the spark for interaction and debate, students could discuss ideas on weekly course videos that parallel the course readings or instructor lectures. "Collaborative video annotations" is a term coined by Craig Howard when at Indiana University (Howard, 2012). As Howard describes the process, it is a way for people to talk asynchronously while they are watching a video (Howard, 2010). These video-annotated discussions are richer and more engaging than traditional discussion forum postings. With such an innovation, the video and text are closely aligned in a way that fosters deeper learning (Moreno & Mayer, 2007).

Video annotations empower the user. According to a YouTube blog post (YouTube, 2008), a user can now provide additional background information to a video, create branching stories, or add links to other YouTube videos or channels at any point in the video. As the user plays a YouTube video, he or she can insert personal comments by adding speech bubbles, notes, and highlight boxes wherever deemed relevant. Instructors or learners could also embed questions for assessment.

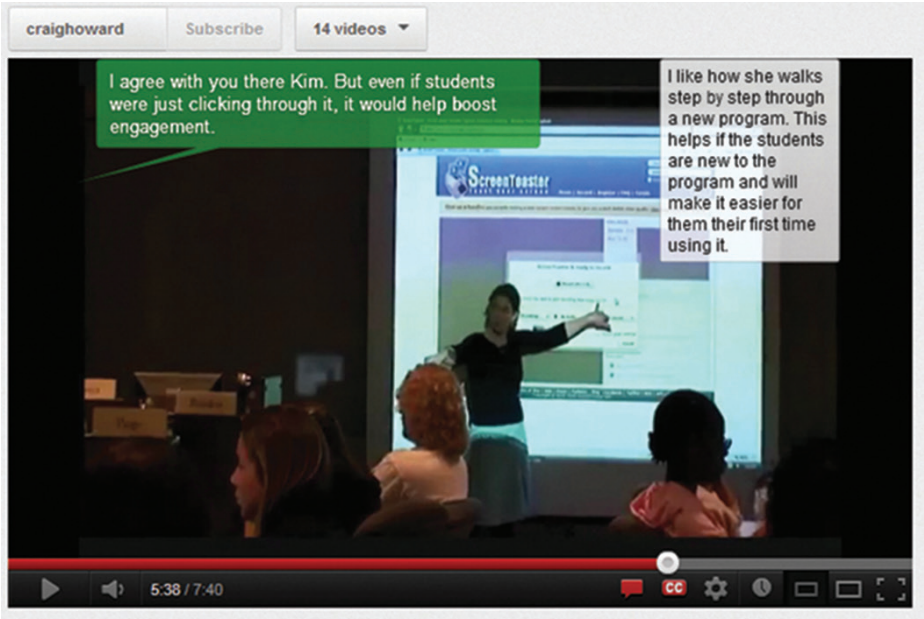
Annotations can be used to evaluate performances, give and receive feedback on performances, analyze the video message, discuss media produced by others, and analyze how messages are constructed. Comments, embedded in a timeline of the video, appear when selected. As such, annotations are an important tool to focus commentary and can elevate performances, foster deeper conceptual understandings, and stimulate student engagement in a previously passive task. See Figure 10.1 for an example.

The purpose of collaborative video annotation is to foster richer discussion about what learners observe in a video as it relates to a class. This activity is a prime example of student interaction and knowledge negotiation. The video provides a common frame of reference or base to refer back to and replay as necessary; as explained in Activity #57 in Chapter 9, the video is the macrocontext. Students can use collaboratively annotated videos for critiques, reflections, project collaborations, presentations, and topical discussions. Students may even use the platform to debate current issues in the news or prominent ideas within their fields (Johnson, 2010).

Not only is such a tool useful in teacher training, there are similar benefits for students planning to be school counselors, clinical psychologists, social workers, auditors, forensic accountants, lawyers, sales managers, nurses, or musicians. Video sequences of recent or distant performances can be inserted for annotations and other forms of feedback.

Skills and Objectives. Includes group interaction skills, sharing ideas and resources, reflection, critical analysis, problem solving, sequencing, conceptual insights, creativity,

FIGURE 10.1: COLLABORATIVE VIDEO ANNOTATION EXAMPLE IN A TEACHER EDUCATION COURSE (Howard, 2012).



deeper and richer understanding of course content, appreciation of the perspectives of others, and feedback. There is an overall focus on higher-order thinking in discussion.

Advice and Ideas. Select or record the appropriate video content for your course. In general, free accounts will allow up to 10 minutes of video. Post the footage to a videosharing site which allows for overlay annotations. In addition to YouTube, tools like VoiceThread, VideoANT, Bubbleply, and Viddler allow for user annotation (Johnson, 2010). Bubbleply, for instance, has options for adding stickers, photos, text, animated bubbles, and links as well as different fonts. Other tools like Viddler allow for text or video commenting; however, Viddler may not be an option as school or university firewalls may make it inaccessible (Byrne, 2010). Be sure to consider the access, security, and functionality of each tool before selecting one.

If you use YouTube, there will be an annotation link for each video you upload. Distribute that link to the appropriate group. Note that this link is different from the "watch link." It is available from the owner's upload confirmation page. You may have to upload the video multiple times in order to obtain a different annotation URL for each group or team.

As learners watch the video, richly annotated discussions will develop (Howard, 2012). Ask your students to rewatch the video after others have had a chance to contribute and then respond to initial annotations. Such an approach will create deeper discussions. Learners could be asked to insert multiple comments per video or multiple comments across all the videos made available for a particular unit or week. A final reflection paper on the experience would foster knowledge integration and summarization.

Variations and Extensions. Students could review annotations made from previous semesters or versions of the course; you could ask them to make metacomments over two or more such previous annotations. In addition, they could write reflection papers on the annotations made by these prior students. Alternatively, consider inviting former

students back to comment on the video annotations that current students have inserted in these videos from previous semesters or in new ones.

Another idea is to have an optional assignment where students create a series of videos with embedded questions. As their peers get a particular question correct, they would proceed further into the interactive experience (see Interactive Shell Game in the Web resources section for an example). This task requires some technology skills, patience, time, and creative imagination. When done well, it can be a highly motivating and widely shared class resource.

Key Instructional Considerations

Risk index: High
Time index: Medium
Cost index: Low
Learner-centered index: High
Duration of the learning activity: Anytime as needed

Activity 68. Video Discussion and Questioning

Description and Purpose of Activity. Annotating video with comments and perspectives is one way to spur learner interaction and collaboration related to the course content. Embedded learner annotations have the advantage of being presented in unison with the content. They can be inserted at a specific moment in the video timeline. However, they do not reappear once you have pushed on to other sections of the video. In addition, the comments can be about insignificant or even frivolous aspects of the video (e.g., what someone is wearing or how their hair looks that day). In response, there are now asynchronous interaction tools for such videos like Vialogues and Grocket Answers (Byrne, 2012c). One can also use Flipgrid for video-based discussions of questions or issues. In addition, synchronous technology like Google+ Hangouts and Watch2gether allow for conversations or chats to flow as the video is being watched in real time (Byrne, 2012b).

As with annotations in the previous activity, learner conversations and commenting on video snippets transform this technology from static content into a more interactive and collaborative experience. To get a feel of what is now possible, there are assorted video examples on the homepage of Vialogues. Popular "vialogue" reflections found there include those on financial markets, cello performances, USA women's soccer, child poverty, and the impact of stress. Instructors or students have a choice of selecting an existing video from YouTube in which to have a discussion or uploading a unique one. The Vialogue can be public or private. Links can be embedded in a course management system, blog, or resource list (Byrne, 2012c). However, only the moderator of a particular Vialogue can post polling questions.

Grocket Answers is similar to Vialogues, though instead of the focus on conversation and dialogue around a particular video, it is annotated with questions and crowdsourced answers (Winkler, 2011). Anyone can ask a question or offer an answer and then pin it to a particular point in the video. Questions and answers appear at the exact point where they are relevant. In this way, at the exact moments when the video content gets complex or difficult to comprehend, questions and answers may arise in unison to clear it up. Such an approach allows the learner to focus on the remaining sections of the video

and not give up or become overwhelmed. Each of these tools is a means for students to focus on particular content while interacting with their peers and others. They expand a video-watching activity into a more creative video production task.

Skills and Objectives. Includes group interaction skills; peer and instructor feedback; content review; reflection; grasping themes, plots, and main points; forming conceptual linkages; appreciating the perspectives of others; and deeper and richer understanding of course content. There is the potential for dual coding of the content with text juxtaposed against the video content.

Advice and Ideas. Once again, you must test or experiment with each tool or system privately before employing it in class. Some of the synchronous tools have freewheeling chat from around the world that would be inappropriate for youth to observe, much less engage in. Fortunately, most video discussion systems allow for private URLs that you can personally share with your learners.

We recommend that you ask your colleagues if any of them has used a video discussion, testing, or commenting technology. Once you have selected a tool, start small with perhaps a trial video segment. Be specific about expectations including the timing of student postings, the minimum length, the type of discourse expected, and so on. Once comfortable with the tool, you might consider embedding a role-play activity within the video discussion and commenting activity. Gather formative as well as summative feedback from students on that experience.

Coinciding with their video commenting and discussion activities, you could have students write reflection papers on the content of those discussions, possibly including a glossary of terms that they thought were important as an appendix at the end of their papers. As a class, individual students or pairs of students could be assigned to collect those term summaries and place them in a wiki glossary of all the terminology used in the video discussions.

Variations and Extensions. Consider asking your students to sign up for a week of the semester where they are required to find a few videos that are closely related to the course content. Then ask them to use an asynchronous discussion tool such as Vialogues and build discussion threads for one or more of these videos. At the end of the week, they could follow that up with test or review questions with Grocket Answers.

Key Instructional Considerations

Risk index: Medium
Time index: Medium
Cost index: Low
Learner-centered index: Medium
Duration of the learning activity: Anytime as needed

Activity 69. Word Cloud Interactions

Description and Purpose of Activity. As mentioned in Activity #49 in Chapter Eight, as the resource pools in course content library expand, the role of the instructor changes to one of concierge or tour guide. At the same time, students take on new roles through which they contribute to the Web instead of simply receiving from it. Participatory on-

line environments offer opportunities for learners to contribute their ideas, insights, and personal views to the Web. Given the vast array of contributions coming from the instructor and the students, however, there need to be new ways to quickly capture, display, and comprehend what is initially available in addition to what people have contributed to the system.

Tags can add labels and associated meanings to digital artifacts related to the course. They are a means to index or catalogue the content. Another way to understand the content and contributions is to use a visual representation of it such as a word cloud (Lindsay & Davis, 2013). Word clouds help learners visualize word frequency in a dataset or document. The importance of each word may be represented by the shape of the word cloud in addition to the style and size of font, the color, and the word's position in the cloud. In addition, a word cloud can highlight key themes and common vocabulary used in the course or some section of it. The words represented in the cloud that are not familiar to the learners can be looked up prior to fully participating in the course. A word cloud can also introduce new and important terms prior to a class assignment or lecture.

As noted in Activity #50 in Chapter Eight, a massive open online course (MOOC) can generate thousands of participant postings (Kop, Fournier, & Mak, 2011). Tools like Wordle can help learners skim through the course materials and visualize the content of a particular document before reading it. With a quick glance, they can grasp the main topics of different conversations and then decide upon which ones to contribute something meaningful. Such word clouds can also help instructors stay abreast of what is occurring in their online courses in an efficient and sometimes quite motivating manner. And when text becomes visualized, there is an element of multimodal learning; in effect, there are two ways to retrieve needed information: (1) from the text document, and (2) from the visual representation of that text document.

Word clouds can be generated by the instructor or by the students in the course. Some tools create word clouds from a text document and others rely on URLs of blogs, blog feeds, and other Web pages. Word clouds can also be generated from bookmarked websites. There are a number of freely available social networking tools and systems for word clouds, including TagCrowd, Wordle, ToCloud, Tagul, Tagxedo, and Worditout (Hammad, 2012). Teachers of younger learners might try ABCya (Gorman, 2010). WordSift is another simplistic tool which has a unique link to a visual thesaurus for each word. That feature alone is very motivating and contagious. The user can often control the number of words, the minimum frequency of use, words to exclude or filter out, and the language in which to translate the word cloud results (e.g., Hungarian, Danish, Spanish, and so forth). Figures 10.2 and 10.3 illustrate the result of word clouds for the text at the beginning of this chapter using Wordle and TagCrowd.

Skills and Objectives. Includes visual representation of knowledge, discriminating concepts, comparison and contrast skills, spontaneity, reflection, synthesis and summary skills, and evaluation. A word cloud offers learners with visual learning preferences a chance to catch up to other learners in a text-dominated class or unit.

Advice and Ideas. Assign students to generate a word cloud from one key document assigned in the course or from a related document they found on their own and read. Next, ask them to write a short (1–2 page) reflection paper on their learning in that unit.

FIGURE 10.2: WORD CLOUD OF THE INTRODUCTION SECTION OF CHAPTER TEN OF THIS BOOK USING WORDLE.

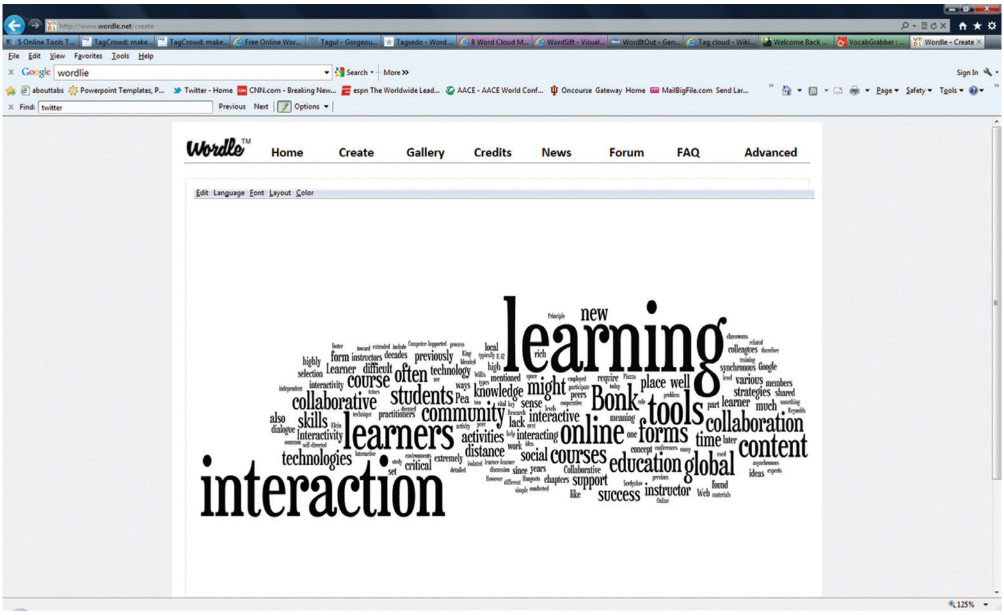
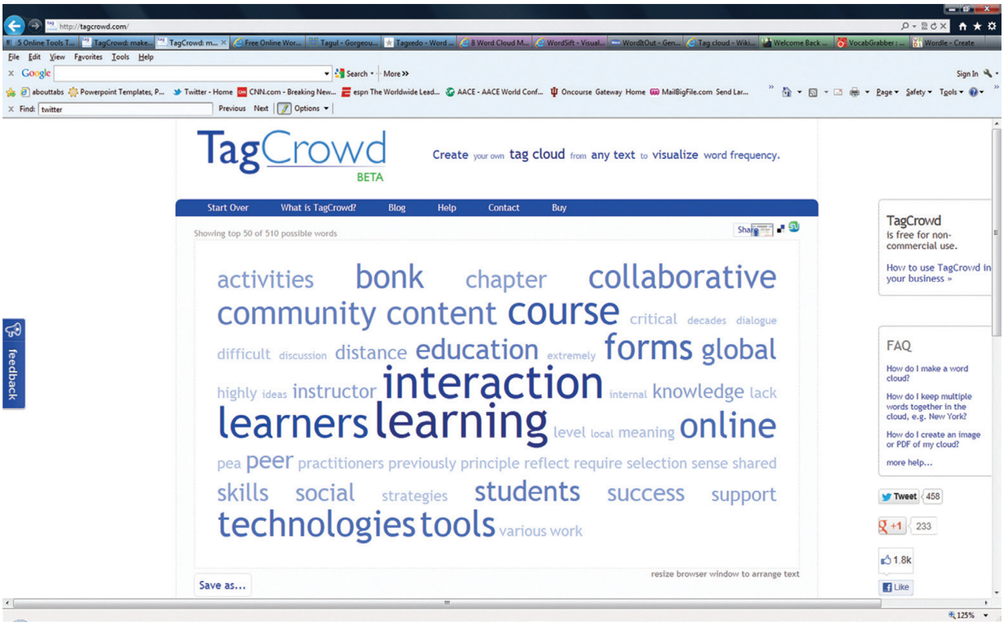


FIGURE 10.3: WORD CLOUD OF THE INTRODUCTION SECTION OF CHAPTER TEN OF THIS BOOK USING TAGCROWD.



They should include at least 10 of the words listed in their word cloud. The third and fourth pages of the assignment might be reserved for the word cloud image and a student-designed glossary of key words listed in it. We suggest that you make your grading scheme clear and available in advance. Perhaps more important, we recommend that you place the highest-rated papers and word clouds in a project gallery for the course.

Variations and Extensions. One variation would be to assign pairs of students to create separate word clouds for each chapter or module. When complete, each pair could present their word cloud and associated interpretations of it in a short three- to five-minute presentation. From an instructional standpoint, each student would be lecturing on the chapter instead of solely relying on the instructor notes. Students (or the instructor) could vote on the best presentation, with the winner receiving bonus points or recognition in the course management system.

Another variation is to ask students to create two word clouds from the course content. First, ask them to reflect on the best text-based resource that facilitated their learning and generate a word cloud from it. Next, ask them to find the least known resource for this course that was highly valuable to them and generate a word cloud from it as well. Those two unique word clouds could be uploaded to a course gallery of word clouds.

Key Instructional Considerations

Risk index: Low
Time index: Low
Cost index: Low
Learner-centered index: Medium
Duration of the learning activity: 1–2 weeks

Activity 70. Backchannel Conference and Course Participation

Description and Purpose of Activity. Given the time, money, energy, planning skills, and commitment that are required to attend a conference these days, few students can attend them. Fortunately, online conferences are prominent today and many are free or offered at a significantly reduced price. In addition, many conferences post their keynotes and specially invited talks for free to the public. As a result, your learners can monitor a broad online conference such as the Global Education Conference or Global Learn, or one in a specific domain, such as Music Therapy or Cardiovascular Health.

Virtual attendance can entail many degrees of involvement and forms of interaction. With the rise of the backchannel, or the conversations that wrap around the events occurring during the conference, there is now an added layer in which to participate. Your students could help with fact-checking during a speech, offering links to resources, projects, and tools mentioned, noting and cataloguing themes within or across presentations, blogging on their opinions and summaries, and so on. As fact-checkers, students can verify claims and perhaps even communicate with the presenters during the actual presentation.

Live presence at a summit, symposium, public talk, or conference often allows for the same backchannel participation. With WiFi connections for their laptop computers, students can chat about the conference with other students. There might also be a conference hashtag for Twitter activities and quick response (QR) code for mobile applications associated with the conference that can be photographed or scanned in. When audience members add an event hashtag to their tweets, others can search and review all the background tweets associated with the event.

To be sure, backchannels have other uses in education besides conferences. Such uses include taking notes on lectures, asking questions of the instructor or others, offering advice on issues and topics, and sharing course resources between instructors and students. MOOCS, mentioned in Chapter Eight, are ideal for backchannel activities such as using Facebook, Twitter, and blogging (Kop et al., 2011), especially if there are synchronous sessions with the instructor(s) or other guest expert presenters.

At Purdue University, for instance, students can anonymously ask questions and offer real-time feedback using a mobile Web application. The tool developed at Purdue is called the Hotseat. It combines aspects of Facebook, Twitter, and text messaging for a unique class backchannel (Dybwad, 2009a). Unlike the hot seat activity mentioned in Chapter Eight, instructors at Purdue are often in the hot seat, rather than the students. Purdue is not alone. As an example, Twitter is also being required in journalism courses at Griffith University in Australia (Dybwad, 2009b).

Clearly, universities are beginning to see the importance of an online channel for more complex forms of interaction rather than relying solely on traditional instructor lecturing to the students. In her review of backchannel research and theory, Jennifer Maddrell (2008) noted that the benefits might include enhanced student participation, deeper processing of information, increased interest in the topic, peer support, and spontaneous discussions that lead to creative insights. Unlike a traditional classroom setting, learners can interrupt the backchannel conversation and ask for clarification (Warlick, 2009). Maddrell simultaneously is honest about the drawbacks, which include split attention, heavy cognitive load, redundancy, side comments that might be of limited interest or impact, and the general lack of time to process all the information.

Skills and Objectives. Includes the ability to monitor progress, synthesize trends, filter information, distinguish facts from themes, combine ideas, make creative insights, multitask, communicate events, and listen to others. The diverse views should help foster an appreciation for diverse ways of knowing and multiple perspectives. Involvement in the backchannel can apprentice novice learners into a field.

Advice and Ideas. Search for a conference, workshop, institute, summit, symposium, or other related event in your field. Find out all that you can about it and share that information with your students, including the conference homepage, Twitter hashtags, Facebook fan pages, wiki URLs, and associated conference resources. If you locate more than one online event related to your class or topic, have students vote on which one to attend virtually. You may have to write to the conference organizers to obtain a pass for your students. Be sure to test student access to that conference; perhaps take them to a computer lab to try out their passwords. Those wanting some bonus points might create a job aid or screencast instructions.

Embed assignments around key moments of the conference, but be sure to offer plenty of learner choice and control. For instance, you could include a reflective writing assignment related to the backchannel experience or content. Collaborative assignments with students in similar courses who are located in other educational settings or countries should foster greater interaction and collaboration.

Once the conference or event is selected, offer students reflection questions, issues, or areas to focus on. You may want to require some minimum number of postings to the conference Twitter feed. You could also create a separate Twitter feed about the confer-

ence or event just for your class. Perhaps have teams of students interview the various conference keynotes and plenary speakers. Alternatively, they can select topics or papers of personal interest to conduct some type of follow-up interview. Highlight such events as they occur and recognize any of your students who played a role in the conference from a distance.

Variations and Extensions. Julie Lindsay and Vicki Davis (2013) offer advice to those wanting to take a stab at creating their own conference within their class or across classes. Your students, along with local or global experts, could be the speakers and participants. As part of these efforts, instructors could post the title of their conference and list of speakers. A backchannel could be created through a conference blog. As mentioned in the previous chapter, presentations can be streamed through systems like Ustream or LiveStream. In addition, Facebook, Ning, and Twitter accounts might be created to which outsiders to the course could subscribe; students could be posting to each of these accounts as part of the class activity.

When complete, have students write a paper wherein they reflect on these experiences. And be sure to archive videos from the conference and everything else for which you have permission and then share it.

Key Instructional Considerations

Risk index: High
Time index: High
Cost index: Low
Learner-centered index: High
Duration of the learning activity: 3–5 weeks at the end of the semester

Final Reflections on Interactivity

As shown in this chapter, interactivity comes in an array of forms. The type of interactivity emphasized in this chapter is with other people. We saw virtual team interaction with activities using such technologies as Popplet and Meeting Words to coconstruct a final course product that could be used by students in later versions of the course. Such teams could also present their ideas and products in an interactive online press conference or symposia, whereas others might rely on word clouds or mind maps to do their explaining. The important thing is to focus on learner ideas; have them generate, discuss, negotiate, and share new knowledge.

But we were not done. We also detailed various forms of class interaction in scholarly, scientific, and innovator role-play activities. Such activities give students license to be creative while exploring leaders in a field or topic in some depth. And then there were activities that highlighted the use of shared online video including video-based annotations in YouTube and discussions in Vialogues and Flipgrid. In addition, your class may interact in systems like Piazza about basic and more complex questions that are perplexing them. If some students lack access to such technology or find it too complex, jigsaw and other cooperative learning structures can still be formed to help them interact online and gain expertise in one or more areas.

Keep in mind that collaborative learning was a fixture of the learning technology world before the emergence of the Web. Researchers had advocated groupware products in the workplace as well as in higher education during the late 1980s and early 1990s. The Internet, in fact, spawned global collaboration in the 1980s with Usenet news groups, the Well, and other interactive group technologies. There were collaborative writing tools like Aspects, Conference Writer, BBN Slate, the Knowledge Builder, and Collaborative Writer long before the dawn of the Web (Bonk et al., 1994).

Sir Tim Berners-Lee's much-acclaimed Web invention only accelerated this trend. The emergence of the Web 2.0 offers even greater chances for active, participatory learning. Tools for interactive commenting, rating, ranking, discussion, and sharing now dominate the Web. Today, employers simply expect it. We can no longer train individuals for a solitary existence in the work world. Teamwork, communities of practice, and mentoring and coaching programs are pervasive in corporate, government, and military settings.

Given the endless opportunities for online interaction and collaboration today, no one can detail all the possible activities that you can now try out in a single chapter. Consequently, you will need to experiment with different ideas and explore the Web resources associated with this chapter as well as the other fourteen. In particular, we encourage you to refer to the 10 learner-content activities in the next chapter. As stated earlier, in many ways the present chapter goes hand in hand with the next one. You will, in fact, notice the word *interactive* within the descriptions of several of the activities outlined in the next chapter. In most of those tasks, the term signals interaction with the content or the system, whereas the activities of this chapter mainly entailed interaction with other people. Still, many, if not most, of these pedagogical ideas entail a bit of both.

As indicated, Chapter Eleven is on engagement and involvement in learning, while focusing on learner investment and effort in all aspects of the online course. The activities we outline will be part of the antidote to learner disengagement, passivity, and boredom. The goal is involvement in the learning process, as opposed to mere reception of some preordained learning path. When learners are excited, engaged, and involved, they will exert extensive effort. As this occurs, they will often discover personal passion for learning. And so we hope that you will turn to it now and perhaps discover new ways to help your students find their respective learning passions. As Captain Jean-Luc Picard routinely shouted aboard the U.S.S. Enterprise, "Engage!" And engage we shall.

Praise for *Adding Some TEC-VARIETY*

"There are books on theory and books on practice, however this is the best volume ever written for using learning theory to inform effective practice. This book is a tour de force for creating an environment where students not only succeed in online learning, but they achieve excellence as well."

—**Charles (Chuck) Dziuban,** Director, Research Initiative for Teaching Effectiveness (RITE), Professor Emeritus and Inaugural Pegasus Professor, University of Central Florida, and Sloan-C Fellow

"An excellent book from world leaders in the field that will be of great value for educators and designers. Presents concrete examples grounded in solid 'practical' theory."

—**Charalambos Vrasidas,** Executive Director of the Center for the Advancement of Research & Development in Educational Technology (CARDET), Associate Dean for elearning, University of Nicosia, Cyprus, and author of several information technology and distance learning books

Based on 10 theoretically driven and proven motivational principles, *Adding Some TEC-VARIETY* offers 100 practical yet innovative ideas to motivate online learners and increase learner retention.

What motivates?

1. **Tone/Climate:** Psychological Safety, Comfort, Sense of Belonging
2. **Encouragement:** Feedback, Responsiveness, Praise, Supports
3. **Curiosity:** Surprise, Intrigue, Unknowns
4. **Variety:** Novelty, Fun, Fantasy
5. **Autonomy:** Choice, Control, Flexibility, Opportunities
6. **Relevance:** Meaningful, Authentic, Interesting
7. **Interactivity:** Collaborative, Team-Based, Community
8. **Engagement:** Effort, Involvement, Investment
9. **Tension:** Challenge, Dissonance, Controversy
10. **Yielding Products:** Goal Driven, Purposeful Vision, Ownership

This is the book you need to grow your online teaching repertoire in innovative ways that will grab your students' attention and imagination. **Additional book resources as well as a free e-book are available for download at http://tec-variety.com.**

Curtis J. Bonk, PhD, is professor in the School of Education, adjunct in the School of Informatics, and associate faculty member in the Cognitive Science program at Indiana University. He is also the author of *The World Is Open* and several other books.

Elaine Khoo, PhD, is a research fellow at the Wilf Malcolm Institute of Educational Research (WMIER) based in the Faculty of Education at The University of Waikato, Hamilton, New Zealand.