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College of Education + Human Development

CEHD Flipped Learning Guide

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Flipped Learning: An Introduction

This guide is for instructors who are interested in flipped learning. It is a synthesis of the literature on flipped learning researched by CEHD's Digital Education and Innovation team. Need help flipping a course or session? Contact Digital Education and Innovation (DEI) at deiteam@umn.edu. We can help.

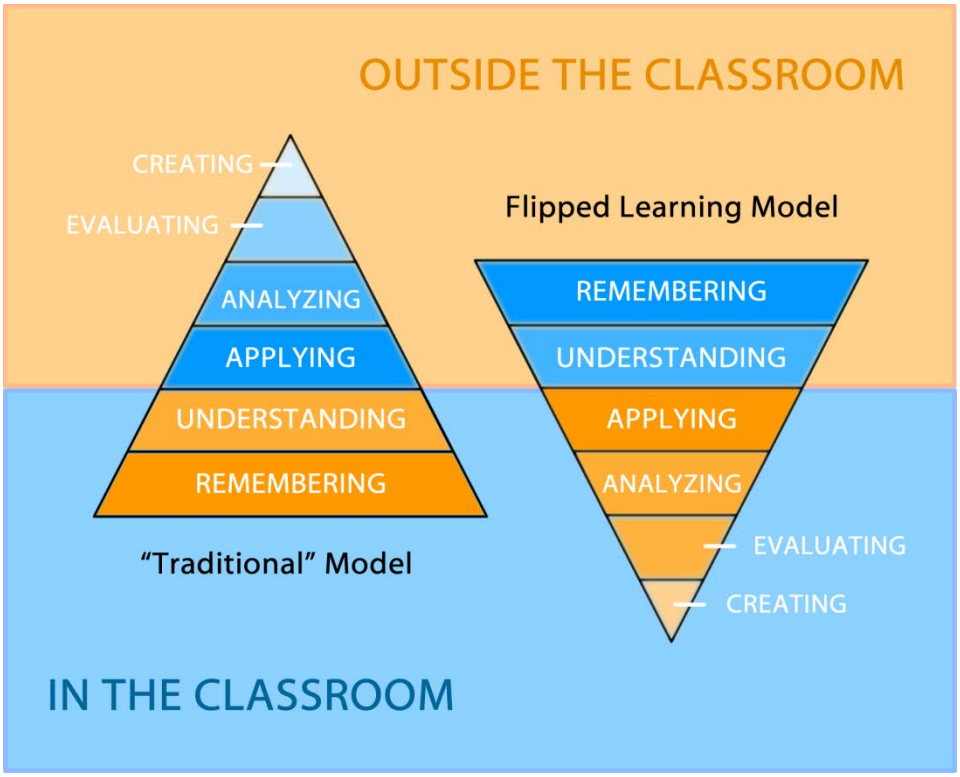
This guide contains:

Flipped Learning Defined

Flipped learning is a pedagogical model where traditional instructional goals for what happens inside and outside of class are reversed and student learning becomes increasingly active. When flipped, students acquire knowledge, develop comprehension, and have opportunities to assess their understanding outside of, and typically prior to, in-class meetings. This acquisition occurs through carefully designed, typically independent, and self-directed activities. During in-class meetings, instructors facilitate active learning, engage students, guide learning, and provide feedback as students work together to apply their new knowledge. The flipped learning model can be used for a single session or an entire course.

Bloom's Taxonomy

The revised Bloom's Taxonomy of the Cognitive Learning Domain provides an excellent visualization that supports the flipped learning approach.



How Does Flipped Learning Differ from Hybrid/Blended Learning?

While hybrid/blended and flipped approaches are similar in that they both typically utilize in-person and online activities, there are some differences. Simply put, the goal of a hybrid/blended approach is to replace in-person sessions with online sessions. In contrast, the goal of a flipped design is to move the students' initial exposure to course content outside of the classroom so that in-class meetings can be used for direct student engagement (with the instructor, with each other, and with course content). Additionally, a hybrid/blended course requires the use of a course management system (e.g., Moodle) to track student completion or attendance, whereas a flipped approach does not (the activities completed outside of class time can utilize a variety of strategies and do not necessarily have to be technology-based).

The decision to create a hybrid/blended or a flipped course should be determined by considering the course goals and learning objectives.

Benefits/Challenges of Flipped Learning

Benefits

When thoughtfully designed and implemented, a flipped approach:

- Allows more time for instructors to interact with students, and students to interact with each other.
- Promotes "learning by doing" as students create solutions to challenges presented by course content.
- Provides an opportunity to redefine and expand the role of the instructor (e.g., instructor as coach).
- Provides more time for instructors to assess student mastery of course learning objectives.
- Leverages affordances of learning technologies to present course content in creative and instructionally effective ways.

Challenges

Consider the following when designing and implementing a flipped course or session:

- Manage change proactively—Your students may be encountering the flipped approach for the first time, so incorporating additional opportunities to motivate and support your students will help them make the most of this learning experience.
- Stay student-centered—Resist the conventions of the traditional lecture course structure; be a "guide at their side" instead of a "sage on the stage."
- Cultivate student responsibility—Students may need support to cultivate the time and task management skills necessary to complete prior-to-class activities.
- Stay in touch—When students are working outside of class, provide them with a method to ask questions and receive answers in a timely manner.
- Provide technical support—When requiring students to use technology to complete course activities, provide clear instructions on how to use the technologies and where they can get technical support.
- Give yourself enough planning and development time—Flipping a course takes time. Start with a course you are familiar with. Give yourself at least two months to develop your first flipped course (Digital Education and Innovation can help you prepare). Consider taking it slow when you start with this approach—start by flipping only a session or two.

How Flipped Courses are Structured

Each course that uses the flipped learning model will be different. There isn't a template to follow. However, here is a brief outline of a typical flipped learning course structure:

Prior to in-class meetings:

- Students watch videos, listen to podcasts, or complete assigned readings to gain exposure to course content.
- Students complete a check-for-understanding activity (e.g., auto-graded Moodle quiz).

During in-class meetings:

- Instructor leads a check-for-understanding activity to assess student comprehension of the content reviewed prior to class.
- Students participate in active learning activities to deepen their understanding of the content.
- Students complete additional checks for understanding (e.g., quizzes).

Occasionally:

- Students submit formative course feedback to the instructor (who responds accordingly).
- Student work on/complete additional homework assignments (e.g., exercises, projects, papers).

Instructional Strategies and Student Success

Learning Objectives

As you develop a course using the flipped learning model, always begin with the learning objectives. If you are adapting a previous course, the objectives and sequence of activities may need to be modified for a flipped approach. As with any course, it is important that the course's activities and assessments align with the learning objectives. Consider what the students will be able to DO upon completing the activity (or the course). Use action verbs when you describe each objective. Learning objectives should be observable and measurable.

As part of your flipped course planning, organize your learning objectives by cognitive complexity. Bloom's Taxonomy is a good tool for organizing your objectives. With flipped learning, it's important that objectives aren't simply organized chronologically across the length of the course. Rather, basic learning objectives will be paired with more advanced learning objectives as you plan learning activities. For example:

- Lower-order objectives (e.g., remembering and understanding on Bloom's taxonomy) are often those that students master prior to class.
- Higher-order objectives (e.g., applying, analyzing, evaluating, creating on Bloom's taxonomy) are often mastered during in-class activities.

Knowing where the objectives cross from being basic to complex is essential to your course plan and can make it easier to decide what, exactly, should be covered prior to or during class meetings.

Note: How your objectives align with the taxonomy may vary from activity to activity. For example, students might have prior-to-class activities that require them to apply and analyze.

Instructional Strategies for Activities to Be Completed Prior to Class

There is an often-repeated belief that flipped learning means simply recording your course lectures and putting them online. This approach, however, is just one instructional strategy that may be utilized for prior-to-class learning activities. There are many instructional strategies that can be incorporated in a flipped course or session. For example:

- Readings (journal articles, news media, etc.)
- Reviewing a recorded course lecture
- Video lectures (e.g., TED Talks)
- Audio podcasts
- Collaborative annotations on a video or PDF document
- Online discussion forum

Learning activities to be completed by students prior to in-class meetings should provide a foundation for the activities of the in-class meeting. Think of these prior-to-class activities as those that build knowledge and develop comprehension. When designing the prior-to-class learning activities, make sure your students understand what objectives they're fulfilling and also provide them with an opportunity to test their knowledge. Providing a check for understanding before coming to class gives the students confidence that they understand the material to the depth you require. Plan the deadline for completion of the check-for-understanding activity at least one day prior to the in-class meeting – this gives the instructor time to check in with students or make alterations to the instructional plan if necessary and students time to revisit what they don't understand in order to better prepare for the in-class meeting activities.

Homework

In the flipped learning model we differentiate knowledge and comprehension learning activities from homework assignments. When planning homework assignments, capstone projects, or term papers, consider the overall workload required to complete the course. Keep in mind the amount of time students spend on activities that must be completed to prepare for each in-class meeting (activities that build knowledge and develop comprehension such as watching lecture or demo videos, listening to podcasts, or reading articles/chapters). Balance the workload to ensure that students have time to come to in-class meetings prepared for in-class activities AND complete homework.

Instructional Strategies for In-Class Activities

Below you will find a number of instructional strategies that can be used when planning in-class activities. This is just a sample and a starting point as you begin to plan your flipped course.

Active Learning

In an active learning approach, students learn by doing. The students are *active* rather than passive. The University's Center for Education Innovation has a helpful online resource that covers the basics of active learning and provides suggestions for active learning strategies. The Center also has recommendations for making active learning work.

Experiential Learning

Experiential learning is immersive and hands-on (e.g., simulations, role-playing, experiments, demonstrations, field trips, labs, debates). Choose an activity that the students have the skills to complete. Students must be actively involved in the experience and not just observers. The activity should include opportunities for collaboration. Include an appropriate method for students to reflect on the experience (e.g., journaling, blogging, essays, and discussion forums). Consider designing subsequent activities that build upon or take advantage of the gains from these experiences.

Student-created Content

In many learning environments, students are consumers of content. When students create content they take ownership over their own learning and progress through the course. These activities are effective only when the student-created content is made an integral part of the course (students are consuming each other's content in order to advance through the course). Throughout a single course have students create content in a variety of formats. Encourage students to be creative. Examples of student-created content include digital stories, mini-documentaries, blogs, podcasts, and presentations. Provide students with clear guidelines and examples in each format. Include opportunities for students to provide feedback or evaluate their peer's content. Student-created content and related peer review can encourage students to engage more deeply with course content.

Large or Small Group Discussion Activities

Discussions can provide context, meaning, and relevance to course content. Develop discussion questions that encourage students to explore perspectives different from their own, test assumptions, and develop communication skills. Determine how and who will facilitate the discussion (e.g., small groups led by students or large groups led by the instructor). Communicate clear expectations for participation. Keep discussion on topic. Keep to a predetermined duration.

Small Group Work

Keep in mind when assigning group work that the expectations should be clearly defined. The needs of the project(s) should determine whether students are assigned to the same group for the entire course or are part of a different group for each activity. Define the roles available for each member of the group. Make sure each of the students understand the responsibilities of each role. Each role must contribute in order for the group to complete the activity. Assess all roles equally (each role's contribution is worth the same number of points). Reward students for being positive and encouraging. Keep the groups small. Assign group membership as randomly as possible (groups should be made up of students of different skill levels and backgrounds).

Peer Feedback

Consider including peer feedback as part of your activities. Learning takes place on both sides—the students being evaluated learn from the perspective of their peers and the evaluators learn from carefully examining the work of others. Provide your students with a rubric. When drafting the rubric consider the following: Assessments should align with learning objectives. Break down the student product to be assessed into component parts. Use a hierarchy to communicate the value of the component parts. Be specific and descriptive. Include both qualitative and quantitative evaluation methods. The Center for Advanced Research on Language Acquisition (CARLA) has an online guide to rubric development.

Essentials for a Successful Flip

Now that we have covered flipped learning basics and explored possible instructional strategies, let's review what you need for a successful flip. Provide students with:

- An opportunity to gain exposure to course content knowledge prior to class. This could be a video, podcast, or readings.
- Incentives to prepare for in-class meetings. Communicate clear expectations for completion of prior-to-class work and assign a significant value to these assignments in the students' grades.
- Guidance on how to manage time and tasks related to coursework.
- A mechanism to check for understanding prior to in-class meetings. Consider using auto-graded Moodle quizzes configured to give immediate feedback.
- Multiple channels of communication. Communication with the instructor is key to student success.
- Real-time formative feedback throughout the course. Be prepared to address issues and make adjustments in a timely manner.
- Highly structured and carefully planned in-class activities that focus on deeper learning and direct engagement (e.g., quizzes, problem solving, active learning, and collaborative learning).
- Learning experiences that are aligned. In-class activities should have a clear connection to the activities completed prior to the in-class meeting.

Creating Content for Flipped Instruction

There are lots of different ways to present content online. Some content is better suited to online delivery than others. Let your goals, objectives, and content guide your path and then choose a medium that is most effective. For example, sometimes your concepts may be communicated more effectively in a PDF. In this section we will focus on some best practices for using video as it can be an effective way to address lower-level learning objectives.

- What is your goal? What are the learning objectives? Is video the best way to communicate to students what they should know or be able to do upon completion of the activity?
- Do you want to re-use the content presentation in future courses? This may determine exactly how you frame the content and what you choose to capture or produce. Always caption your videos, especially those you plan to use again, as you don't know the needs of your future students.
- Do you have time to create a good quality product? Watch similar videos online, set your own standard of quality balanced by your skills and equipment. Strive to meet or exceed that standard with each video you create.

Working with Video

When you have established that it is the correct medium for your goals, objectives and content, video provides an opportunity to create more engaging materials. When done well, video can be powerful, versatile, and extremely engaging. Recording a video of your content and making it available online allows for powerful messages to be captured, enhanced, and integrated into a variety of instructional strategies. Using online video to deliver your content will ensure consistent communication of concepts (especially important if there is more than one instructor), it's accessible on a variety of devices, and students can access and review the material 24/7.

When choosing to produce your own video of a lecture or presentation there are several things to consider, such as the organizational structure of the content, the visual design of the presentation, and the type of technology to use. Here we have provided a brief overview of considerations and best practices.

Quality

When presenting content online, quality is essential. Hard-to-read text, inferior quality audio, extremely large files, or poorly-organized content can detract from your students' learning experience. Recording high quality presentations requires substantial planning and can be very time-consuming.

Which Software?

What software should I use? This is an often-asked question, but one that doesn't have an easy answer. There are many, many software applications that all produce a "video." There is no single software application that will meet every need. Trying to sort out which software you should use can be daunting. The best approach is to sit down with someone from Digital Education and Innovation. We can help you identify the best software for your needs.

Plan First, Record Second

The bulk of the work for a recording is actually done on paper first, before you record. Some people are natural extemporaneous speakers and can get a presentation right recording on the fly. But even then, when they go back and review the presentation, they often notice additional things they wanted to say or things to tweak. Most people do best when they plan ahead. For presentations that incorporate a high level of media production (graphics, video footage, audio, etc.), it is essential to plan ahead.

Examples of Different Approaches to Online Video Content

Basic

Record yourself narrating some slides

Advantages: Easy learning curve. Lower time investment.

Disadvantages: Not as engaging for students.

Intermediate

Create a presentation that incorporates video clips, graphics, audio,

Advantages: More engaging for students.

Disadvantages: High learning curve, or requires support from DEI staff.

Advanced

Produce a high-quality instructional or documentary video.

Advantages: Very engaging.

Disadvantages: Significant time investment, production done by DEI.

Video Quick Tips

- Before you start recording, write a script. The end product will sound more polished and is much easier than transcribing audio after recording.
- Consider the needs of all of your students. Caption all of your videos.
- Don't repeat the content from assigned readings or in-class activities.
- Engage your viewer by asking questions and proposing activities throughout the video.
- Keep videos short. "Chunk" your content into easy to digest portions; several short videos are more successful than one long video.
- Each video should be no longer than eight minutes in length.
- Speak clearly and vary the pitch and tone of your voice appropriate to the content.
- Choose visuals that reinforce and support your message. Practice good visual design.
- Ask for help. DEI staff is available year-round to assist you.

Technical Considerations

Are you recording in your office or classroom? Can you handle the recording on your own? Typically, stimulating, engaging, and interactive videos require more advanced hardware, software, and skills but with practice, basic equipment, and a little know-how anyone can do it. DEI is available to lend some expert advice when you need it.

- Decide how you will capture or produce content. What hardware, software, or expert services do you need?
- Different hardware and software products produce different file formats. Knowing what file format you will have is critical in order to edit, produce, and share video content. Be sure to consult with DEI experts if you are unsure.

Pre-Production

Organizing content in a logical manner allows 'clean takes' and less work. Portion your content into "chunks," or segments, so it is easy to consume. Think about it as a series of videos in order to cover all of your content. You can create the chunks in post-production. Determine if your video production will consist of screen recordings (e.g., your presentation slides), "talking head" video (e.g., use your webcam to capture you speaking), or a combination of both (some video editing software allows for picture-in-picture).

- Carefully consider your location. Avoid recording outdoors or in a noisy office or classroom.
- Preview the layout of your recording space. Test the placement of your camera and microphone including audio levels. Do you have enough desk space to access your script, keyboard, and mouse?
- Test hardware. Replace batteries before they run out. Is your camera and microphone compatible with your laptop/computer?
- Practice.
- If you are recording yourself, wear solid colors that have little pattern. While you might look stylish in herringbone, the jittering in the video that it may cause will make it look like your shirt is moving independently from your body.
- Avoid recording video of metallic and reflective surfaces as they can create distracting lighting issues.

Presentation Content Best Practices

- Focus on the message. What do you want your students to take away from watching your presentation?
- Tell a story. Give your presentation a start, middle, and end.
- Be authentic. You are an expert. Be passionate about your subject.
- Choose images and symbols carefully.
- Limit distractions. Avoid using animations or slide transitions, unless they support your message.
- Increase interactions. Ask questions and propose follow up activities throughout.

Use Good Visual Design

High quality presentations, no matter the tool they are created in, follow some basic rules of graphic design. Remember you are designing a presentation, not a document.

- Use no more than three fonts and three text sizes. There should be a clear rationale for why you are varying fonts and sizes (e.g., to differentiate headings, subheadings, emphases, etc.). Not only does this make your materials easier to process visually, the consistency will give your presentation a polished look. Use sans serif fonts which are easier to read on a screen or when projected.
- Keep your fonts as large as possible without filling the entire space or creating a disjointed sentence. Design for the student in the last row.
- Limit the number of colors you use. Avoid bright colors. Text and background colors should highly contrast each other (e.g., dark text on a light background).
- Align content via a grid. Grids allow you to maintain a sense of balance and symmetry of elements on a page. Many presentation tools, such as PowerPoint offer a grid overlay option.
- Include whitespace. Add space around paragraphs and images.
- Consult with DEI on a design scheme for your presentations.

Capturing Audio and Video

Whether you are recording yourself using a webcam at your desk or screen recording a PowerPoint presentation there are some things you will need to consider.

- Give yourself more than enough time.
- Close your door. Turn off your fan. Silence your cell phone. Prevent email notifications. You might even consider putting a 'Recording in Process' note on your door.
- Close any computer application or browser tabs you are not using. Not only can they be distracting, too much load on the computer can distort audio/visual quality.
- Just as eye contact is important in conversation, it is important in video. If using a webcam, look into the camera.
- Stay in place. It is distracting to your viewer if you sway on and off camera. The same is true for when you are recording narration. Position your microphone so you are at a constant distance from it. Moving back and forth may cause volume changes and distortion.
- If simply recording narration to slides your materials may be easily viewed, but, if projecting within a classroom, chances are the materials are not easily seen in the video. Make the presentation materials available online as well. If that is not possible, be sure to describe audibly what you are specifically pointing out on a whiteboard, slide or projection of any kind.
- If you need assistance recording a live lecture or in-class session, contact DEI.

Post Production

Instances of dead air and volume leveling can be 'polished up' in many videos but, in general, editing is a time consuming process and a great deal of work. If your entire recording is blurry, the audio quality is questionable, or there are many errors, it is best to re-record rather than allowing a video that will be distracting to your students.

- Break up the content into smaller pieces. Five to eight minute segments assure students will be more engaged. It also makes it possible for students to customize their learning, reviewing specific concepts that are a struggle for them.
- You are a student of your production. Watch your video, assess yourself, and improve.

Sharing Your Presentation

- A great segment is useless if no one knows how to access it. Be sure to include appropriate directions in your Moodle site.
- If you set an expectation that the materials will be available at a particular time, assure that they truly are, students seek consistency in not only your message but the technologies used.
- To assure everything works, review your content after it is produced and then again after it has been placed online (where students will access it).
- Worried your students will not watch the videos? Have you ever been concerned that your students may not show up to class? Set similar course expectations appropriate to the materials. If viewing the content is required, explicitly state it. Provide students with content related questions or other graded check-for-understanding activities. Doing so not only stresses the importance of viewing materials, they also act as a type of primer for potential follow up in-class scenarios. Consider enabling Activity Completion Tracking and the Progress Bar in your Moodle course site to help both you and your students track their progress.

Technology Tools for Flipped Learning

Camtasia Relay

Camtasia Relay is screen recording software that is often used to record a voice over a PowerPoint presentation or a Prezi, although it can be used to record your voice over any presentation tool or application that can be displayed on your laptop screen. Faculty, staff, and students can use Relay under license by the University. For more information, see the Office of Information Technology's Classroom Recording web page.

Price: Free
Platform: PC and Mac
Flipped Learning: Use Camtasia Relay to record pre-class lectures or for students to easily create video assignments.

Camtasia Studio

Camtasia Studio is a powerful screen recorder and video editing tool. This software is not licensed by the University but is still supported by Digital Education and Innovation. Post a ticket to the Coconut for more information on obtaining a license for Camtasia Studio. For more information on Camtasia Studio, visit the vendor's web page.

Price: There is a license fee for Camtasia Studio. The price varies by vendor. Many vendors offer education and group discounts.
Platform: PC and Mac
Flipped Learning: Use Camtasia studio to create robust and dynamic pre-class lecture videos as well as in-class learning modules.

VoiceThread

VoiceThread is integrated into Moodle and allows participants to interact with a multimedia slide presentation as they experience it. The presenter can narrate the slides through comments and viewers can interact with the presentation by leaving audio, video, or text comments. It is possible to convert a PowerPoint presentation into a VoiceThread quickly and easily. For more information, see the Office of Information Technology's VoiceThread web page.

Price: Free
Platform: Web, Moodle, iOS
Flipped Learning: Use VoiceThread to engage students in a multi-media dialogue around a video or presentation or as an alternative to a Moodle Forum.

FlipGrid

FlipGrid enables instructors to post short discussion-style questions that students can asynchronously respond to through self-recorded videos up to 90 seconds in length. FlipGrid was developed by CEHD's Learning Technology Media Lab. For more information on FlipGrid, see their home page.

Price: Free
Platform: Web, iPad
Flipped Learning: Use FlipGrid for class introductions or to engage students in a time-restricted dialogue around a topic.

Presentation Tools

PowerPoint is one of the most commonly used tools for presentations but there are other tools that are easy to use and are designed to help make your content more engaging. Some tools Digital Education and Innovation recommends are:

- Animoto – Upload photos, video clips, and text to create vibrant video slideshows with music or audio.
  - **Price**: Free limited account; Free "Pro" account for educators
  - **Platform**: Web, iOS, and Android
- Google Slides – A no nonsense presentation creation tool that is part of the Google Drive suite of apps; performs similar to PowerPoint and Keynote.
  - **Price**: Free
  - **Platform**: Web, iOS, and Android
- Haiku Deck – An image and idea-focused presentation app for creating presentations on an iPad. Haiku Deck's philosophy is to keep presentations simple, beautiful, and fun.
  - **Price**: Free
  - **Platform**: Web, iPad
- Keynote – A PowerPoint-like presentation tool for Mac.
  - **Price**: Part of iWork suite for Mac
  - **Platform**: Mac, iOS
- Prezi – A unique presentation tool that utilizes a "zooming user interface" to put as much focus on the big picture of a presentation as its details.
  - **Price**: Free basic account; Free "Enjoy" account for educators
  - **Platform**: Web, iOS

YouTube

YouTube is a video sharing website that allows users to upload, view, and share videos as well as create "channels" for organizing their videos. The website has robust features that enable users to set security on their videos as well as edit them right in YouTube without the need for external tools. Some of the more useful editing tools include audio (adding and editing), annotations, analytics, and light and color enhancement. YouTube has a particularly robust tool for adding subtitles and closed captions to videos and many people upload videos to YouTube simply for the easy-to-use captioning capabilities.

Price: Free
Platform: Web, iOS, Android
Flipped Learning: Use YouTube for sharing class videos with students or ask students to use it to share/submit their own video assignments.

VideoANT

VideoANT is a web-based application that allows users to create time-synced, text-based notes (annotations) on videos. VideoANT was developed by CEHD's Digital Education and Innovation. For more information, see the VideoANT information page.

Price: Free
Platform: Web
Flipped Learning: Use VideoANT to engage students in a dialogue around a video or for giving instructor or peer-review feedback on a video.

Moodle

Moodle is the University of Minnesota's official course management system. The following features can be especially useful in a course that utilizes the flipped learning model.

Activity Completion and Progress Bar

Activity Completion allows you to set completion criteria for each activity. A checkmark appears next to the activity on the course's home page when the student meets the criteria (e.g., viewing the activity, receiving a certain score, or manually marking an activity complete by the student).

The Progress Bar block is designed to help students stay on task by visually indicating what required activities and resources have yet to be completed or viewed. The instructor determines which activities and resources are tracked.

Each Moodle site includes a series of reports that show student activity and completion across the course. These include Logs, Activity, Activity Completion, and Course Participation. Each report shows student progress in different ways. The Participation report, for example, can show when a student had posted to a forum and can send a message to students who have not done so.

Flipped Learning: Use Activity Completion and/or the Progress Bar to give students a visual representation of their progress in a course, especially if you find students are having a difficult time keeping up with assignment deadlines.

Forum and Chat

A Forum is an asynchronous activity where students and instructors can exchange ideas by posting topics and replies. There are four basic forum types. Forum posts can be graded by the instructor or other students and participation/completion in forum activities can be tracked and are included in activity/participation reports.

A Chat is a synchronous activity that allows instructors and students to engage in an online, real time dialogue. Chats can be scheduled for specific dates and times, scheduled to be recurring (e.g., weekly or daily), or can be open for whenever anyone is online and wants to take advantage of the activity. Instructors can also view transcripts to past chat sessions and can chose to open those transcripts up to students, as well.

> **Flipped Learning**: Forums and Chats are excellent tools for engaging students in a discussion on various topics within a class. In addition to general discussion, both features can provide students with a Moodle-integrated method for contacting the instructor with issues or questions.

Quiz, Feedback, and Survey

The Quiz activity allows the instructor to build quizzes consisting of a variety of question types, including multiple choice, true-false, and short answer. These questions are kept in a question bank and can be re-used in different quizzes. Quizzes are graded automatically and can be configured to allow multiple attempts. The Instructor can choose to have the quiz give immediate feedback and show the correct answer. A Moodle quiz would be a great tool for a prior-to-class check-for-understanding activity.

The Feedback module allows instructors to create and conduct surveys to collect feedback from their students. Unlike the Survey module, instructors can create their own questions in the Feedback module as well as create quiz-like activities that are non-graded.

The Survey module gives instructors the ability to gather data from their students from a set list of questions based on verified survey instruments such as the Constructivist On-Line Learning Environment Survey (COLLES) and the Attitudes to Thinking and Learning Survey (ATTLS). Surveys cannot be graded nor can instructors create their own questions in a survey.

> **Flipped Learning**: Quizzes, Feedback, and Surveys provide excellent opportunities for instructors to test knowledge or to check understanding of a concept prior to in-class meetings, gather information, solicit feedback about a course or course site. Plan for time to analyze the results and make any necessary adjustments to the curriculum.

Database, Wiki, and Glossary

The Database activity allows students and instructors to build and curate a database of entries based on any topic the instructor desires; entries can contain text, images, files, and URLs and can be set up to be monitored by the instructor – requiring approval before an entry is posted. Databases have a robust number of settings that relate to the grading of the database activity, viewing rules (e.g., students can always view or only view after submitting a number of entries), restrictions on how many entries are submitted, and even allow comments on entries.

The Wiki module gives students and instructors an easy way to create a wiki within a Moodle site without needing to understand web development or HTML. Wikis are not graded by Moodle but can be used as an assignment as they can be created for individual students or for groups, encouraging collaborative work among students in a class.

The Glossary activity creates a course-wide glossary of terms that are either entered by the instructor or by the students. Glossaries can be graded and many settings allow the instructor to control the way the Glossary is used, similar to the Database settings. A neat feature of the Glossary activity is the ability to turn all instances of a glossary term into a link to the glossary entry throughout an entire Moodle site, giving students an easy way to define terms while going through the course.

> **Flipped Learning**: The collaborative nature of Databases, Wikis, and Glossaries opens up opportunities to engage students in the creation and evaluation of knowledge repositories with the added bonus of being able to be graded based on their interaction (Database and Glossary only).

Assignment and Workshop

The Assignment module provides instructors with an easy way to have students submit their work, review it, provide feedback, and grade all within Moodle. When used with Turnitin, instructors can have student work automatically checked for originality and can put markups and feedback directly in the assignment before returning it to the student.

The Workshop module is similar to the Assignment module, except that an instructor can broaden the review process to allow students to peer review each other's work and earn a grade for their peer reviews. Workshops are a complex module to understand and manage so it is recommended that both students and instructors be comfortable with the Assignment module before introducing the Workshop module to a class.

> **Flipped Learning**: Assignments and Workshops give instructors the tools to seamlessly work with Moodle to have students turn in assignments, give feedback, and be graded. Use Workshops to allow students to peer-review each other's work and give them the opportunity to learn more about working with a partner or small groups.

Support for CEHD Instructors

CEHD Digital Education and Innovation

Digital Education and Innovation (DEI) supports CEHD instructors develop effective technology-enhanced solutions for teaching and learning. DEI offers a number of services including hybrid and online course development.

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Further Reading

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