Eastern Michigan University

Flipping the classroom with video at
Eastern Michigan University

The "flipped classroom" has garnered a great deal of attention in recent years. Also known as "reverse instruction," a flipped class generally assigns recorded lectures for out-of-class viewing, in order to free up the classroom for more interactive, student-focused learning activities.

The WIMPi project at EMU utilizes Panopto for two basic purposes: to flip classes by limiting one-way instruction inside the classroom and to document student progress through the program. WIMPi professors use Panopto to deliver online lectures for class preparation and review, prepare students for lab work, document acquired competencies, and record multimedia student assignments.

The challenge:
Making the classroom more interactive and efficient

Frank J. Fedel, an Assistant Professor in the Health Promotion and Human Performance department at Eastern Michigan University, first introduced Panopto into his classroom in the fall of 2009 to address a basic pedagogical problem: a lack of time.

"Students are with you for a limited time, so how do you make the best use of that time? It occurred to me that providing information to students doesn't necessarily require a two-way interaction," recalls Fedel. "Take the case of textbooks and video. Are lectures fundamentally any different?"

Fedel and his colleagues at EMU became intent on flipping their classrooms by moving one-way communication outside of the classroom and reclaiming that precious time for group discussions, collaborative projects, and practical demonstrations. Professor Fedel soon realized that this approach would solve another persistent problem with traditional lectures.

About Eastern Michigan
EMU's distinct mix of comprehensive academic resources, strong community initiatives, focus on Education First, and nationally-recognized undergraduate and graduate student research achievements set it apart. EMU is regularly recognized by national publications for its excellence, diversity, and commitment to applied education.

Faculty: 700

Students: 23,000

Degrees: Undergraduate, Graduate, Specialist, Doctoral, Certificate

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The solution: The WIMPi project

Professor Fedel knew that lecture capture would be central to flipping his classroom and making his courses more personalized and interactive, but his ultimate vision was far more comprehensive. Fedel sought to leverage a variety of classroom technologies to create a learning experience unrivaled in any classroom. He envisioned a virtual classroom that would be "technologically savvy, collaboratively intelligent, and fun to use."

With the help of fellow innovator and Clinical Coordinator of the Athletic Training Education Program, Jim Sweet, Fedel turned his vision into the WIMPi project. WIMPi combines digital whiteboards, a custom information management system, Panopto lecture capture, and iClicker response technology into a cutting-edge interactive classroom. This combination of WIMPi technologies results in three basic efficiencies that create the groundwork for a more interactive student experience:

- The custom information management system archives professor-vetted material in an organized and searchable format, so students don't have to manage reams of distributed material.

- The iClicker interactive response system gives both students and faculty instantaneous feedback on subject matter retention and mastery.

- The ability to capture instructor notes on interactive whiteboards and record the entire classroom session with Panopto—including any PowerPoint slides or computer screen capture — relieves students of the need to take copious notes during class. They are free to fix their complete attention on the material at hand and participate fully in discussion.

Lecture capture is a fundamental part of the WIMPi classroom, but Fedel and Sweet wanted more out of their media capture solution than just in-room recording. After a good deal of exposure to other systems, the WIMPi team selected Panopto based on three basic requirements for media capture. "Panopto is reliable, flexible and easy-to-use," remarks Fedel. "It simply works."

They found Panopto's ease-of-use particularly attractive, because it allowed them to bring on new team members with minimal training. Fedel was also impressed with the stability of the product, having experienced reliability issues with other systems.

66 Students don't all learn at the same rate… and we can't adjust the pace of our live lectures to accommodate the entire range of student abilities. Having a recorded version allows students to control the presentation themselves and learn at their own pace. 99

— **Frank J. Fedel,** Asst. Prof. Health Promotion and Human Performance, Eastern Michigan University

But in order to achieve the radical reduction in one-way classroom instruction that Fedel and Sweet originally envisioned, they would need the ability to record course material at their convenience, outside of the classroom. "Panopto met our need for recording flexibility," recalls Fedel. "As a software-based solution, it can be used with just about any hardware configuration —including laptops, tablets and smartphones– which makes it incredibly portable."

Fedel began using Panopto in August of 2009 and swiftly became proficient at recording lectures. The following semester, he used it more extensively by recording practical demonstrations and laboratory preparation exercises. He also broadcast a recording of his first remote guest speaker (a colleague from another program) who immediately elected to incorporate Panopto into his own teaching after seeing how it could expand his geographic reach.

Fedel initially implemented Panopto within his own department, Health Promotion and Human Performance, in classes for potential nursing students. The following year he expanded use to include EMU's Master of Science program in Orthotics and Prosthetics, and instructors from Athletic Training, Exercise Science, History and Biology all began researching Panopto integration for their programs.

Currently one program uses Panopto exclusively for online courses while another uses Panopto for every lecture given in the department.

> ❝ I have enjoyed all of my interactions with your technical staff. I am continually impressed by Panopto's willingness to integrate customer suggestions into product development. ❞
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> — **Frank J. Fedel,** Asst. Prof. Health Promotion and Human Performance, Eastern Michigan University

Panopto achieves immediate results

Professor Fedel and his colleagues at EMU are now able to reuse recorded lectures from past semesters as out-of-class viewing assignments for current students and create supplementary material at will, ensuring that classes remain focused on more personalized, interactive activities.

Fedel recalls a significant uptick in viewing hours from the first semester he used Panopto to the second and beyond. "Former students still revisit previous class lectures, presumably to help them review for subsequent classes," he suggests. "More than a few students have mentioned that that they felt more secure and confident having the lecture recordings available as a resource throughout the semester. Many have asked for the capability in all of their classes."

Fedel has noted an additional critical marker of success: "I have anecdotally noticed a real difference in the classroom presence of my students after including the lecture capture option," he confides. "They're asking more sophisticated, in-depth questions during discussions."

Beyond lecture capture

The WIMPi team is currently using Panopto for a broad range of applications beyond classroom capture, including the development of FAQ lists, preparatory exposure to lab exercises, student presentations, and the documentation of graduate student competencies.

Professor Fedel has had remarkable success with the preparatory videos he creates to help familiarize his students with the requirements of upcoming lab work.

The EMU Orthotics and Prosthetics program is moving toward the use of Panopto for all of its courses, with both instructors and students creating recordings. Professor Fedel made it a requirement of every student in his classes to create at least two recordings per semester, which will remain in their digital portfolio as evidence of their performance. The subsequent release of Panopto 4.1 with its student drop box and the recording features in Panopto's iOS app are certain to make this workflow even easier.

In addition to student recordings, the Graduate Orthotics and Prosthetics program has begun using Panopto to test their candidates' competence in a range of acquired skills. This video documentation of proficiency will also remain in the students' digital portfolios for use on the job market and later in their professional careers.

With the implementation of student recording and proficiency documentation, Frank J. Fedel and the WIMPi project have come full circle in some important ways. They have successfully flipped from lecture-heavy classes with a preponderance of one-way communication, to interactive classes with both faculty and students creating digital resources for the future development of EMU students. Professor Fedel's current project is the technical integration of Panopto into his laboratory for recording experimental progress of new orthotic designs, which will no doubt be worthy of its own case study.

> ❝ Students practice at home before they get to lab. When they come into the laboratory, they're much more proficient at what they're doing because they've already seen it done. I give them practice exercises they can do at home, and they can replay the demonstration as often as they need. ❞
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> — **Frank J. Fedel,** Asst. Prof. Health Promotion and Human Performance, Eastern Michigan University