The Learning Glass

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Project description:

As the University of California system became more interested in delivering flipped, hybrid, and fully online course content online and launched the Innovative Learning Technologies Initiative (ILTI), UC San Diego explored moving courses online through a faculty workshop in the summer of 2013. Don Olliff, Instructional Technologist and supervisor of the Instructional Technology Integration (ITI) unit in Academic Computing & Media Services (ACMS) at UC San Diego, saw an opportunity to improve the type and delivery of videos explored in the workshop. He wanted a way for faculty to better present lectures and information to students through video.

Building upon a prototype system created by Professor Matt Anderson of San Diego State University, Don Olliff adapted the Learning Glass system for use at UC San Diego. The Learning Glass allows faculty to record a video while writing on a transparent glass surface in front of them. This allows them to maintain eye contact with the viewer (creating a more engaging video) while still preserving their usual teaching style.

The Learning Glass was largely hand built by Don, and to the exact specifications and lighting requirements that he developed. The overall design was a significant improvement beyond San Diego State University’s design. Craig Bentley, also of ACMS at UC San Diego, first suggested calling the system “the Learning Glass.” This name has since been adopted at San Diego State University and other UC campuses.

Once the Learning Glass was built, Don promoted the Learning Glass at UC San Diego. At UC San Diego, he met with faculty to demonstrate and explain the Learning Glass and developed best practices for creating instructional videos.

Recognizing that the Learning Glass could be a UC-wide resource, he also created specific instructions on how other campuses could build their own. These are available at http://acms.ucsd.edu/_files/explore/learning-glass-documentation.pdf. Almost all UC campuses have requested and received these instructions, as well as five other non-UC universities. Throughout this effort, Don has been a point of contact for UC staff on technical questions about the device, and has hosted in-person visits from several other campuses.
To date, Learning Glass systems have been constructed and deployed at:

- UC Davis
- UC Irvine
- UC Los Angeles
- UC Santa Barbara

The Learning Glass is deployed and offered as one option of several course content video production methods. Other methods include green screen videos, where slides or media are projected behind the presenter, and screencapture videos that included narration. However, after being introduced to the Learning Glass, most faculty are excited about the technology and its possibility for improved hybrid and online course delivery. Approximately half of all videos created by ACMS for use in instruction now use the Learning Glass. One benefit to the Learning Glass is that less time spent on postproduction editing is needed compared to green screen or screencapture videos.

The Learning Glass has improved the quality of the student experience at UC San Diego. The videos created with the system allow students to review material at their own pace and rewatch sections where they need extra assistance. The Learning Glass is also the easiest way for a professor to do formulas or equations in real time, allowing students to review processes step-by-step.

During Winter Quarter 2015, UC San Diego Professor Vivek Sharma of the Department of Physics used 24 videos created with the Learning Glass to supplement in-class instruction. These videos are available at http://iti.ucsd.edu/Secure/Phys2DSharma/Phys2AITISecure_index.html (UC San Diego Single Sign On is required). Each video is approximately 10 minutes in length and featured a graduate student with strong teaching skills. These videos were deployed over the course of five weeks.

- 449 of the 994 students in his course (45.2%) watched at least one video
- The 24 videos were viewed a total of 4,164 times, averaging 173.5 views per video
- On average, each of the 449 students watched 9.3 videos during the quarter
- Students in the course were asked how strongly they felt that problem solving videos like these using the Learning Glass should be provided for future Physics courses. On a scale of 1 to 10, with 10 being highest, 90% of the respondents rated the Learning Glass method as an 8 or higher.

More information about the Learning Glass, including videos showing the Glass in use, can be found online at http://acms.ucsd.edu/faculty/online-education/learning-glass.html.