

# CLASSROOM TECHNOLOGY USAGE PILOT

## WI 2019

*The aim of this pilot study was to assess current classroom technology usage at a private university in Seattle, Washington. A survey was distributed to a convenience sample of 20 potential participants with the ability to recruit others, 11 participants completed the survey. Descriptive analysis was run to determine characteristic technology use of the sample along with correlation tests to beginning understanding use profiles. Results of this study indicated that most participants were open to technology and used most available technology in the classroom which correlated with student exposure to the same technologies. Supported technologies were preferred over social media despite self-identified technology adoption rate. These findings cannot be generalized to the entire faculty demographic. Recommendations to clarify survey items for better responses include definitions of major technology terminology and changes to the Likert scales for inclusion.*

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# Introduction

## BACKGROUND

This project was conducted for the Educational Technology and Media (ETM) department at a private university in Seattle, WA. The mission of this department is to empower teachers and students to contribute to learning that is “active, collaborative, and supportive,” (ETM, 2017). Through this mission, ETM consistently evaluates the needs of the faculty to ensure that training needs and technology offerings are consistent with the values and methods currently expressed by the faculty body.

The last formal evaluation conducted by ETM was two years ago. The last evaluation did not yield expected results as methodology included three (3) open-ended questions. The results of the survey were too broad or not relevant to the purpose of the study.

Primary stakeholders, predominantly from the ETM department, expressed a desire for a more specific, quantitative approach. For timely training and offerings, it was determined to repeat the evaluation process this year. The scope of this survey is to understand whether the technologies offered to faculty currently meets their needs including what technologies are working and not working for teaching, as well as understand what technologies faculty are using and/or experimenting with, and if they know how to use the technologies offered.

Therefore, the purpose of this pilot study is to gather insight into education technology usage by faculty that encompasses objective/factual (type & usage) questions. Five study objectives, including two related to data collection, were created.

### Objectives:

1. Assess current level and type of technology usage by faculty.
2. Assess readiness for online teaching (through analysis of objective 1).
3. Determine if current technology offered to faculty meets the needs of the faculty.
4. Collect feedback from pilot participants on survey questions for improvement.
5. Determine if pilot survey collects intended data.

## METHODOLOGY

### Research design.

Given the history of data collection described in the “Background” section above and the stakeholder’s need for more specific, purposeful data, quantitative methods using a survey were used. Following this pilot, the intention is to distribute the chosen data collection tool to the entire faculty, therefore a survey is easy to administer and collect while using time as a resource wisely. In addition, the type of data collected addresses “what” and “how” professors use technology allowing for quantified results that apply to the needs of most professors.

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## Data Collection Tool.

The quantitative survey was developed using four (4) specific question types: 1) Use and frequency of available classroom technologies; 2) Types of classroom technologies used; 3) Student use of classroom technologies, 4) Survey feedback. Additionally, one self-identification question regarding rate of technology adoption and one optional self-identification question regarding current department were asked to gather some demographic data. The questions utilized Likert-scale, multiple response (i.e. "Select all that apply"), dichotomous (i.e. Yes or No), and open-ended questions for clarification purposes. See Appendix A for specific survey questions. The survey was developed and distributed using *SurveyMonkey for Education* because it limits the type of identifiable data that can be collected to maintain participant privacy.

## Participants.

Paying careful consideration to the fact that the survey will be administered to the entire faculty body, it was determined that pre-selecting a representative sample will give a better understanding of how the survey will fare on a larger scale. Specifically, the pilot was administered to deans and departments chairs who would potentially help promote the larger survey at a later time.

The current sample was selected from the university's directory website. Individuals with titles containing "Dean" or "Chair" were selected. A total of forty (40) subjects were gathered, two (2) did not qualify for this pilot because of their current involvement as a stakeholder in this survey. To address the data collection objectives, each selected participant was asked to recruit 1-2 professors in their department that they considered to be "tech-savvy" to expand our pilot responses and feedback. Because of sample size concerns relative to general population size, surveys were ultimately distributed to twenty (20) deans and chairs that were selected at random.

## Procedure and Data Analysis.

The initial pre-selected participants were recruited via mail/listserv and were given a two-week response period. In an effort to promote response rate, the survey was incentivized by offering a random drawing of a \$200 gift certificate.

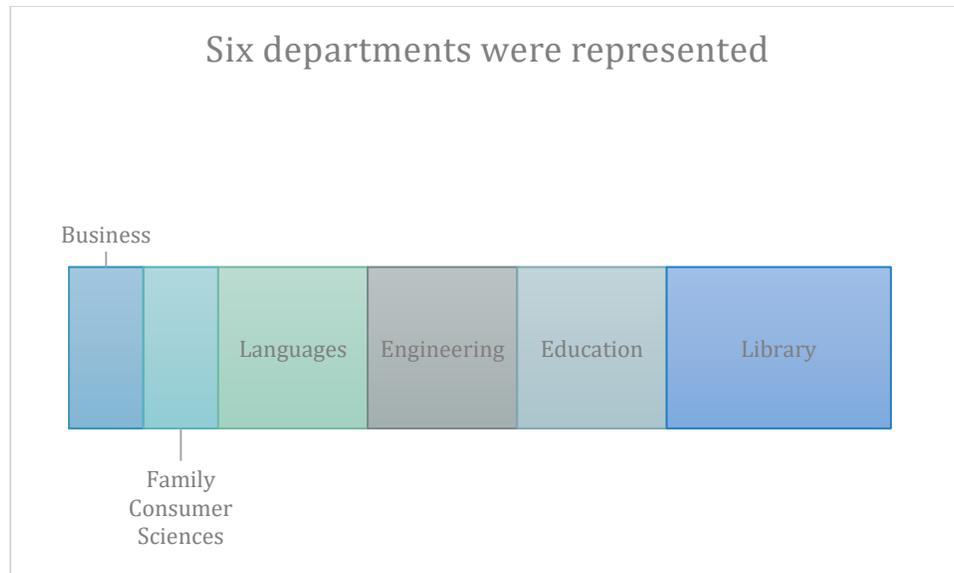
Following the participant response period, the data was analyzed in *Microsoft Excel*. Mean, mode, standard deviation, and range were calculated for all use and frequency questions. Mode was calculated for all technology type and identification questions. To gather relationship insights, Pearson's  $r$  coefficient was used to determine relationships between technology adoption identification vs. technology types and usage, in addition to technology policy vs. permitted technology in the classroom.

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# SURVEY RESULTS

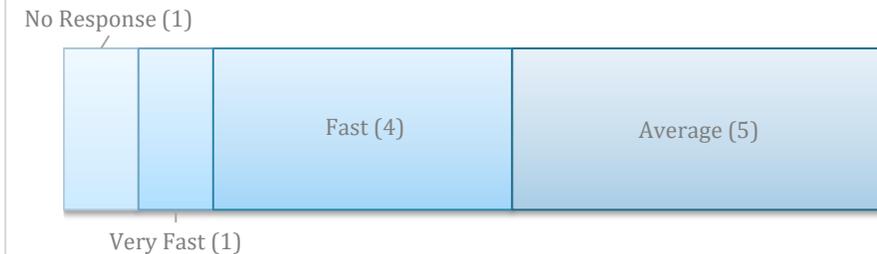
## Sample Snapshot

Eleven respondents from six (6) departments completed the survey. Additional identification questions such as title or position were not asked to protect privacy of participants, therefore it is not possible to determine if the participants were part of the original sample or were recruited by the original sample.



Participants also were asked to self-identify their current level of technology adoption. The responses fell under two major classifications. The majority of respondents (5 of 11) identified themselves as “Average” where they adopt technology as more resources become available, while others (4/11) identified themselves as fast adapters, where they felt comfortable experimenting with new technology. One respondent identified themselves as a very-fast adopter at the cutting edge of technology contrasting with one respondent chose not to disclose this information. Interestingly, none of the participants self-identified as “slow” or “very-slow” adopters.

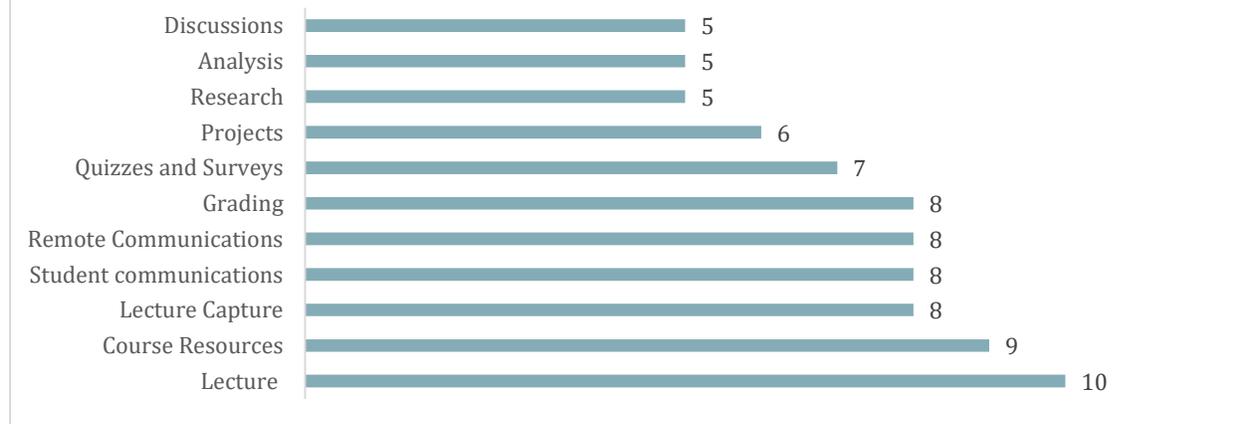
### Most participants self-identified as an "average" technology adopter



### Technology Use Characteristics

*Technology Incorporation in Teaching/Learning.* Almost all (10/11) participants listed as least one area of their teaching and student learning that involved technology. One respondent chose not to disclose this information. Lecture was the most prevalent area where technology was incorporated into teaching, followed by course resources, student and remote communications, grading, and lecture capture.

### Technology was most commonly incorporated in lecture

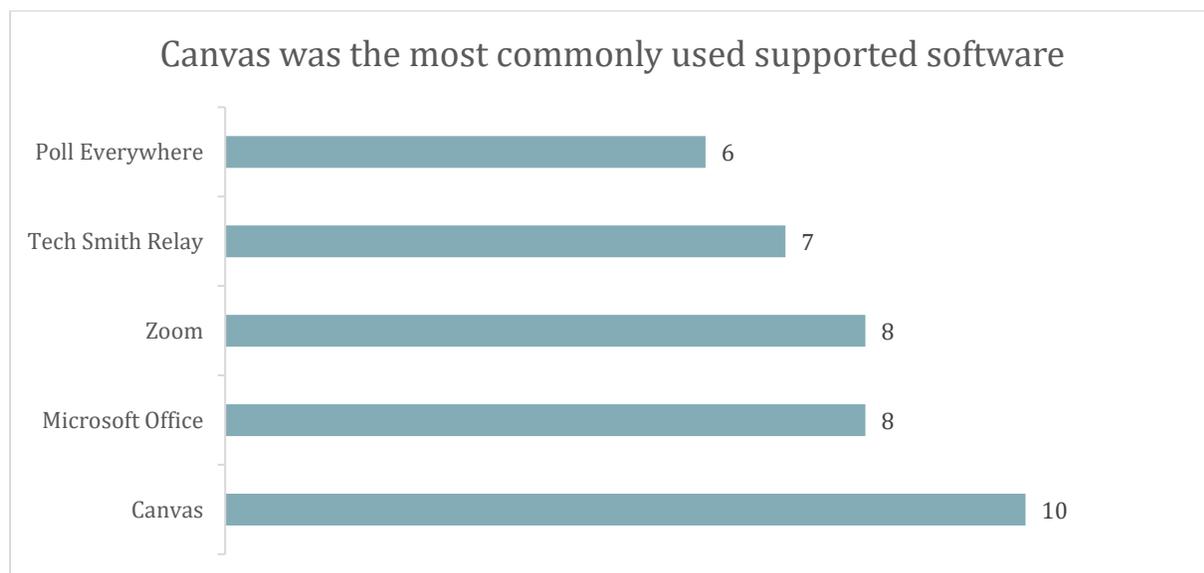


Those who identified as fast adopters also tended to integrate more technology into their teaching. One respondent self-identified as a very-fast adopter also identified 12 areas where technology was integrated into their teaching. In comparison, fast adopters averaged 9 areas, and average adopters averaged 7 areas where they incorporated technology.

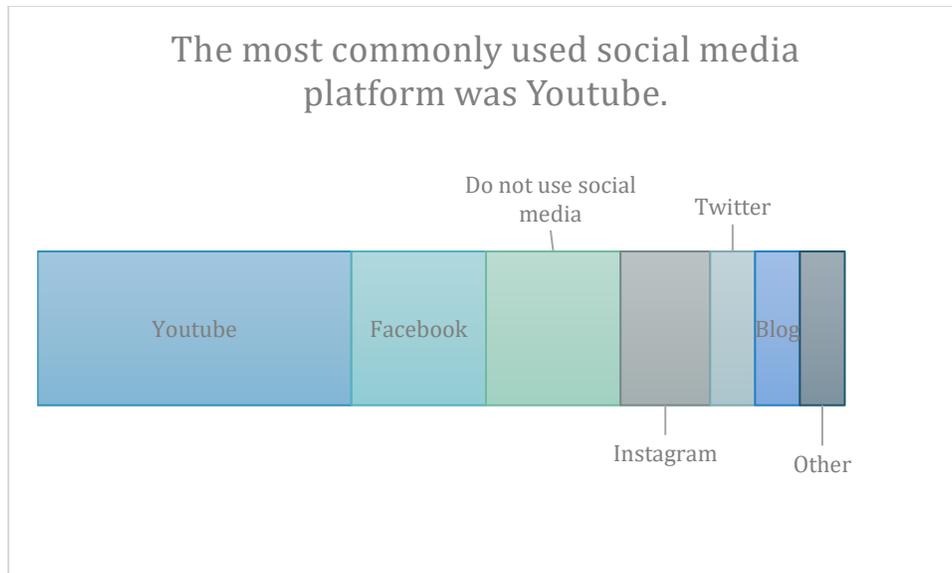
*Technologies Available in the Classroom.* Of the available technologies in the classroom, participants use podium PC's, laptops, Doc Cams, and Whiteboards frequently and are proficient in using them. Other supported classroom technologies including tablets/mobile devices, and active learning classrooms were not available to most participants. However, when asked which of these available technologies the participants would like to learn more about, the majority (5/11) would like to learn about active learning classrooms, followed by tablet/mobile devices (2/11). Only one respondent each indicated that they would like to learn more about Doc Cams, White Boards, and Laptops. None of the respondents wanted to learn more about podium PC's, and three respondents did not provide an answer to this question. The Pearson's  $r$  coefficient indicated a weak correlation ( $r= 0.331$ ) between classroom technology proficiency and a desire to learn more about those specific technologies. Of those that wanted to learn more about active learning classrooms, 2 out of 11 respondents did not have access to an active learning classroom, 3 out of 11 respondents had access to active learning classroom but felt they were medium or low proficient. Given the low response rate, these results may be skewed as 3 out of 11 respondents who did not have access to active learned classrooms also did not provide an answer for this question.

Other classroom technologies such as mic/headsets, webcams, and tablets/mobile devices are used frequently or somewhat frequently by respondents who have access to these devices. Of the participants who currently did not have access to these technologies, most indicated that they would use the technology frequently or somewhat frequently if it were available. Of the technologies listed, the mic/headset was the only option where some participants indicated not having access nor a desire to use if available.

*Software Use in Teaching and Student Learning.* Canvas was the most frequently listed software used by participants followed by Zoom, Microsoft Office, Tech Smith Relay, and Poll Everywhere, respectively. About half of participants also disclosed using software not currently supported by Educational Technology and Media. Of these outside technologies, collaboration and research software was the mostly commonly described.



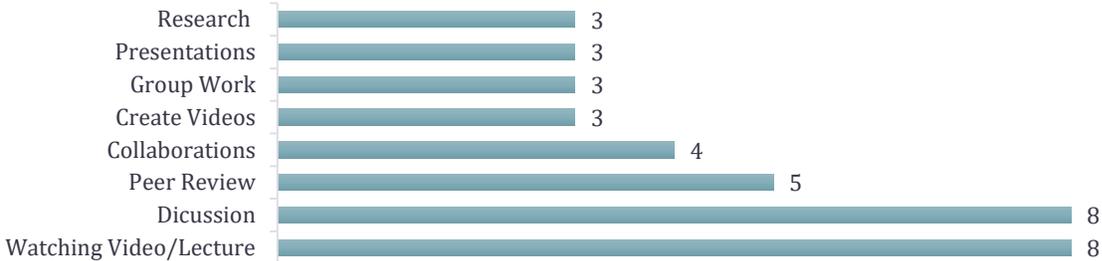
When asked about social media usage in the classroom, most respondents reported using at least one type of social media in teaching and learning, however three respondents indicated not using any social media in teaching. To determine if a correlation exists in this sample group between technology adoption self-identification and social media use in the classroom, the Pearson  $r$  was calculated but showed no correlation ( $r = 0.026$ ) between the two variables. Of the social media options used by the sample, YouTube was the most commonly used (7 out of 11 respondents), followed by Facebook (3 out of 11 respondents) and Instagram (2 out of 11 respondents). Social media apps such as Pinterest, Tumblr, Flickr, Reddit, Quora, and Vine were not used at all by this sample.



*Student Technology Use.* Participants indicated that their students use the Podium PC, Laptops, and Tablets somewhat often in class, while whiteboards were used by students very often. Students very seldom used Doc Cams and active learning classrooms. There was a strong correlation between instructor's access and proficiency of classroom technology and student use of classroom technologies ( $r = 0.891$ ) suggesting that if an instructor is not proficient with a technology or do not have access to the technology then the students will not be exposed to those technologies.

Popular online classroom components used included watching videos/lecture and participating in group discussions. Only one respondent indicated that they did not use an online classroom. There is no correlation between technology adoption identification and student online interaction ( $r = -0.00$ ) however.

## Watching video and dicussions were the most popular student interactions in the online classroom



All participants allowed their students to use technology in some capacity in class. Most respondents indicated that they allowed their students to use all types of technology in the classroom at any time during class (7/11), others allowed students to use any device only at certain times (2/11) of the class period, or only certain devices during certain times of the class period (1/11). Half of the participants also included a classroom technology policy in their syllabus where there was a correlation between this policy and permitted technologies in the classroom ( $r= 0.512$ ).

### Discussion

The results of this pilot study indicate that most professors are fast to average technology adaptors indicating that they are open to technologies in the classroom and use technology in at least one area of their teaching/student learning. Professors feel mostly comfortable with supported classroom technologies unless they do not have access to them. If they do not feel comfortable with a technology, students will also not be exposed to these technologies which may include those that all professors have access to but are not part of every classroom such as mics and webcams. Professors also tend to rely more heavily on supported technologies in their teaching as opposed to social media, which is true even when factoring into technology adoption identification. Professors used on average five (5) of the supported technologies where Canvas was the most commonly used. In comparison, professors only used one (1) social media platform on average, YouTube was the most preferred. The faculty in this study were supportive of student use of technology in the classroom, allowing students to use all types of technologies only discriminating when in the classroom period technology may be used.

### RECOMMENDATIONS

Results from this study only identifies characteristics of the sample group and cannot be generalized to the entire faculty body, therefore recommendations for training and technology offering cannot be made at this time.

## Data Collection Tool Recommendations.

To improve the current data collection tool, the following observations were made during data input and analysis:

- Question 2: Use and Proficiency of Classroom Technologies- The wording of this question should be changed for clarification. The question currently reads, “Which of the following classroom technology you currently use and what is your level of proficiency with that technology?” From the analysis, several respondents did not provide an answer for some of the listed technologies which can be interpreted as they do not use that technology. However, given that there is an answer choice for “no use” may mean that the wording is unclear.
- Students vs. Teacher use of Technologies- the above issue also confounds the correlation analysis between teacher use of technology and student use of classroom technology. The current data present inconsistencies where the instructors leave an answer blank in question 2 yet provide an answer for question 6, “Indicate how often your students use the following classroom technologies.”
- Question 4a- Use of Outside Software Programs- This question is dichotomous yielding a yes or no response. However, observation from data analysis show that only those that answered “yes” actually provided a response while others chose not to respond to this question at all. Reasons for not responding may mean that the participants do not use outside technologies and chose not to answer for that reason. Given that the subsequent question asks the respondent to elaborate on the types of outside technologies used, question 4a does not give any additional relevant information.

## Respondent feedback.

Three (3) questions were attached to the end of the survey requesting feedback from participants on terminology, technology, and classroom issues that were not addressed by this survey. The overarching feedback from the participants was to provide more clarify, including a definition, of current education technology terminology including “classroom technology,” and “online classroom.” For example, one participant wanted to know why “whiteboards” were considered a classroom technology while another wanted to know if “online classroom” only encompassed the learning management system. This was one of the most interesting remarks from this feedback category: “Was active learning defined? Do faculty know that their laptops have webcams built in or do they think it is a separate piece of hardware that attaches to the computer?” Providing these types of definitions at the beginning of the survey would help eliminate response confusion.

Other feedback provided by the sample included clarity on the desired population. Given that most of the questions pertained to instructors teaching in a face-to-face format, one respondent wanted to know if the survey is only open to that population sub-set. To be more inclusive, perhaps more Likert options such as “Do not use/I teach online” could be included into the survey questions. Similarly, other functional survey feedback includes a small change in the Likert scale related to headset/mic, “There was

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not an option for the question about mic/headset and other technology to the effect of "I have access but don't use."

Feedback not directly related to the study itself included awareness of availability of technology coaches and resources and the availability of continuing education for classroom technology.

## CONCLUSION

This pilot study helped gather insight into the current technology usage of the sample population. Although the results of the study may not be generalized to the larger population, the feedback from the sample and data analysis will aid the revision of the data collection tool for clarity. With the addition of definitions, and clarification labels, stakeholders can gather specific and relevant data in the future survey.

## RESOURCES

ETM. (2017). Our Mission [webpage]. Available from: <http://digitallobby.spu.edu/etmresources/>

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# Appendix A

## CLASSROOM TECHNOLOGY USE SURVEY

### 1. Classroom Technology Integration.

Where do you integrate technology into your teaching and student learning? (Select all that apply).

- Lecture
- Lecture capturing (i.e. TechSmith Relay)
- Course resources
- Discussion facilitation
- Student communication
- Connecting with other in remote locations (i.e. students, faculty, guest-lecturers)
- Administrating quizzes, exams, surveys
- Student projects
- Student portfolios
- Grading
- Web-based and data-based research
- Quantitative or data analysis
- Other (please specify) [text box]

### 2. Proficiency in Classroom Technology Use.

Which of the following classroom technology you currently use and what is your level of proficiency with that technology?

	Use with high proficiency	Use with med proficiency	Use with low proficiency	Do not use; but technology is available in my classroom.	Do not use; technology is not available.
Podium PC					
Laptop					
Doc cam					
White boards					
Tablets					

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Active learning classrooms					
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2b) Of the selected classroom technologies from Question 2, are there any technologies available to you in the classroom that you'd like to learn how to use more effectively? (Select all that apply)

- |                                    |   |
|------------------------------------|---|
| <input type="checkbox"/> Podium PC | <input type="checkbox"/> White boards               |
| <input type="checkbox"/> Laptop    | <input type="checkbox"/> Tablets                    |
| <input type="checkbox"/> Doc Cam   | <input type="checkbox"/> Active Learning Classrooms |

**3. Additional Classroom Technology Access and Use.**

Do you have access to the following technologies and how often do you use the technologies?

	Mic/headset	Webcam
I have access to it and I use it frequently		
I have access to it and use it sometimes.		
I have access to it but I don't use it.		
I do not have access to it but would use it often if available.		
I do not have access to it and would use it sometimes if available.		
I do not have access to it and would not use it.		

**3a. Are there any classroom technologies not listed above that is offered at SPU that you use?**

[open-ended]

**3b. Are there any classroom technologies not offered at SPU that you would like offered either in the classroom or online?**

[open-ended]

**4. Software Usage.**

Which of the following software program do you use for your teaching? (Select all that apply).

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Poll Everywhere                       | <input type="checkbox"/> Ref Works        | <input type="checkbox"/> Canvas         |
| <input type="checkbox"/> Tech Smith Relay<br>(Lecture Capture) | <input type="checkbox"/> Podcasts         | <input type="checkbox"/> Visual Studios |
| <input type="checkbox"/> Turnitin                              | <input type="checkbox"/> Creative Suite   | <input type="checkbox"/> Zoom           |
| <input type="checkbox"/> SPSS                                  | <input type="checkbox"/> Adobe Studios    | <input type="checkbox"/> E-portfolio    |
|  | <input type="checkbox"/> Microsoft Office | <input type="checkbox"/> Word Press     |

**4a. Do you use software not listed above in your teaching aside from industry- or department-specific software?**

- Yes
- No

**4b. If you responded “yes” to question 4a, please list the non-listed software that you currently use.**

**[open-ended]**

**5. Social Media Usage.**

Select any social media platforms that you use in your teaching. (Select all that apply).

- Facebook
- Twitter
- Pinterest
- Instagram
- Blog
- LinkedIn
- YouTube
- Tumblr
- Flickr
- Reddit
- Quora
- Vine
- Diggo
- I do not use social media in my teaching
- Other: [text box ]

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## 6. Student Use of Classroom Technology.

Indicate how often your students use the following classroom technologies.

	Very Often	Often	Somewhat Often	Not Often	Never
Podium PC					
Laptop (via podium)					
Doc cam					
White boards					
Tablets					
Active learning classrooms					

## 7. Online Student Interaction.

Which of the following activities characterize how your students interact with your online classroom? (Select all that apply)

- Watch videos/lectures
- Create and/or record videos/lectures
- Discussion forums
- Small group work
- Give presentations
- Collaborative activities (i.e. writing)
- Peer review
- Share research and relevant resources
- Other (please specify)
- My students do not interact with the online classroom.

## 7. Classroom Technology Policy.

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Which of the following statements best represents your policy on student use of technology in the classroom?

- I allow students to use all types of devices (i.e. laptops, cell phones, tablets) at any time during class.
- I allow students to use all types of devices at specific times during class.
- I allow students to use certain types of devices at any time during class.
- I allow students to use certain types of devices at specific times during class.
- I do not allow students to use any device at any time during class.
- I do not allow students to use any device at specific times during class.

7a. Do you currently include a classroom technology policy statement in your syllabus?

- Yes
- No

## 8. Technology Adoption Self-Identification

How would you rate yourself how your ability to adopt to new technology?

- Very fast; incorporate cutting-edge technology
- Fast; incorporate new technology as form of experimentation
- Average; incorporate new technology after a few resources become available.
- Slow; incorporate new technology when existing technology is obsolete
- Very slow; incorporate new technology when existing technology is no longer available.

## 9. Survey Feedback.

Are there any issues related to classroom technology use that is not addressed in this survey?

[open-ended]

9a. Are there relevant classroom technologies not currently listed that should be addressed in this survey?

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[open-ended]

9b. Is there language or terminology expressed in this survey that is unclear or could be potentially misunderstood?

## **10. Demographics**

What department do you currently work for?

## **11. Optional Identification (Pilot only)**

Enter your name and email address if you'd like to be enter in a drawing for a chance to win [insert tech here].