INFORMATION TECHNOLOGY
UNIVERSITY of WASHINGTON

Improving the Student Experience:

Assessment of the 2011-2012 Tegrity Lecture Capture Rollout

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UW Information Technology

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EXECUTIVE SUMMARY

Tegrity is a lecture capture solution that makes it easy to record lectures, presentations, and other activities (audio, video, and screen) using any computer. Launching Tegrity was part of the Teaching & Learning in the 21st Century Initiative of the Two Years to Two Decades project at the University of Washington (UW). (http://www.uw.edu/provost/initiatives/2y2d/teaching-learning/about/). During Winter and Spring Quarter 2012, UW Information Technology (UW-IT) assessed the use of Tegrity among instructors and students. The goals of the assessment were to understand how Tegrity was being used in courses on all three UW campuses, identify best practices, uncover any unmet support needs or obstacles, and find out how instructors and students would like to use Tegrity in the future.

Findings

- ***General Use of Tegrity:*** During the 2011-12 Academic Year, Tegrity was used to record and upload in-class lectures, to maintain continuity when classes were cancelled, and to create materials for student review outside of class, so class time could be used for more interactive activities.

- ***Student Learning:*** Both instructors and students see Tegrity as a useful tool for supporting student learning. A large majority of students felt that "reviewing the Tegrity recordings contributed to my learning": 83% agreed or strongly agreed with this statement.

- ***Ease of Use:*** Instructors and students found Tegrity easy to use. Instructors reported that they only needed minimal support to get started with Tegrity, with most primarily learning to use Tegrity on their own.

- ***Future Uses:*** Instructors and students found Tegrity particularly useful for large lectures, small lectures, and online courses and felt it should be deployed more widely in those courses. They also saw potential for educational and administrative use beyond the classroom.

- ***Current Limitations:*** Instructors and students made limited use of many of Tegrity's advanced features: bookmarking, search, student-created recordings, and access on mobile devices. In addition, instructors would like to see large lecture halls better configured for use with Tegrity.

Recommendations

Tegrity is the go-to lecture capture and presentation recording solution for all three campuses. During the 2012-13 Academic Year, UW-IT will continue to promote and support the use of Tegrity in accordance with the following recommendations: (1) promote best practices for using Tegrity and highlight benefits to student learning, (2) expand integration into more classrooms, and (3) better support the use of advanced features, such as student recording of content. In addition, since the release of Tegrity Manager in Summer 2012, Tegrity is available for use beyond the classroom. We will assess use in this area.

INTRODUCTION

Tegrity is a lecture-capture solution that makes it easy to record lectures, presentations, and other activities (audio, video, and screen) using any computer. UW-IT launched Tegrity on all three University of Washington (UW) campuses during the 2011-2012 Academic Year. Traditionally, lecture capture has been possible only in select lecture halls that have recording equipment installed. Tegrity enables recordings to be created in unequipped classrooms, offices, residences, or field locations—vastly expanding the reach of this technological solution.

Launching Tegrity was part of the Teaching & Learning in the 21st Century Initiative of the Two Years to Two Decades project. The Teaching & Learning Technology Oversight Committee, consisting of faculty and staff from all three campuses, advised UW-IT throughout the launch. The primary goal of launching Tegrity was to improve the student experience by making more course resources available for students to review and by giving instructors tools to support new pedagogical approaches. One of the consistent findings from campus technology research efforts, such as UW-IT's triennial technology surveys, is that students want more course information to be available online (http://www.uw.edu/lst/research/research_projects/2011techsurveys).

Tegrity became available for use in a controlled rollout during Autumn Quarter 2011; a handful of faculty began to use or experiment with the technology at that time. Since most instructors prepare new materials or learn new technologies in advance of the quarter in which they introduce them, a more general launch of Tegrity began in Winter Quarter 2012. During the 2011-12 Academic Year, Tegrity was available for use by any instructor teaching an official UW course and by the students in those courses. Because access was based on official course lists, use beyond this context was not possible.

UW-IT's support for Tegrity involved providing general support to the first wave of instructors working with Tegrity, while also working closely with support staff in departments and on branch campuses to give those staff the training and access needed to provide local support. By the end of Autumn Quarter, several support staff had been deputized as "Help Desk Admins," an administrative role in Tegrity which allowed them to directly support instructors and students in configuring courses, recording content, and troubleshooting any problems that arose. As the year progressed, most classrooms on the Bothell campus and a handful of classrooms on the Seattle campus were configured for use with Tegrity. On the Seattle campus, these classrooms were managed by Classroom Support Services and Health Sciences Academic Services & Facilities and did not have competing technology already installed. Tegrity was tied into existing audio or video systems where possible, but not all rooms had the same options available.

During Winter and Spring Quarters in 2012, UW-IT assessed the use of Tegrity among instructors and students. The goals of the assessment were to understand how Tegrity was being used in courses on all three campuses, identify best practices, uncover any unmet support needs or obstacles to Tegrity adoption, and find out how instructors and students would like to see Tegrity used in the future. The findings from the assessment will be used to help shape how Tegrity is promoted and supported at the UW. In this report we share findings from the assessment, highlighting Tegrity's strengths, current limitations, and potential for future use. We end with recommendations for how to move forward with this technology.

ASSESSMENT METHODS

This report uses data collected from surveys, interviews, and usage reports. This section discusses the methods used in collecting these data.

During Winter Quarter 2012, instructors were recruited for interviews based on their use of Tegrity. The top 20 users of Tegrity during the quarter were sent an email asking their willingness to be interviewed for this study. Interviews were conducted with six instructors. When instructors were recruited for the interviews, we also asked if they would forward an email to their students which included a link to a WebQ survey. A total of 346 students from 16 courses responded to the survey. The response rate could not be calculated since enrollment information for the classes were not available.

In Spring Quarter 2012, students were recruited directly based on their use of the Tegrity system. A total of 141 students from 38 classes responded to the survey (33.5% response rate). Instructors were recruited in the same manner as Winter Quarter, but were asked to complete an online survey rather than participate in an interview. Of the 56 instructors recruited, 29 responded (51.8 % response rate). Student responses to the Winter and Spring Quarter surveys were combined prior to the analysis for a total of 487 respondents.

The usage data reported here derive from Tegrity's system for capturing data. We first extracted the data from their system, then focused on key variables of interest, namely number of viewers, viewing duration, number of recording made, and the like. We filtered the data to exclude use of "private courses" in Tegrity (where instructors can test out the system without sharing recordings with their course) and use by administrators. Data were obtained for individual courses, although here we report aggregate usage data on these variables.

FINDINGS

Findings from our assessment of the 2012-2013 Academic Year show that Tegrity use expanded as the year progressed, with instructors on all three campuses adopting this technology. Results were strongly positive about Tegrity's contributions to student learning. However, data also show limitations to Tegrity's current use, especially in the adoption of advanced features and limited integration into classroom infrastructure. In this section we discuss Tegrity's current usage, strengths, and limitations in detail.

Use of Tegrity

Overall, 83 instructors used Tegrity in Winter and Spring Quarters, in a total of 122 courses (Table 1). Usage increased from Winter to Spring Quarter on all three campuses. Several instructors used Tegrity in more than one class, with nine using Tegrity both quarters.

Overall, 2,114 individuals viewed at least one recording on Tegrity during Winter and Spring Quarters, for a total of 7,900 viewing hours (Table 2). Although there were more viewers during Winter Quarter (likely due to the use of Tegrity in larger-sized courses), there were more viewings in Spring Quarter, suggesting that the technology had more routine use during that quarter.

Recording Content

The six instructors who participated in Winter Quarter interviews and the 29 instructors who responded to the Spring Quarter survey identified themselves, for the most part, as early adopters of technology. On the technology adoption scale we used on the Spring Quarter survey, no respondents selected the two lowest points, "I never adopt it" or "after most of my colleagues." On the other hand, the highest point on the scale, "I'm one of the first to try it," was selected by 31.0% of instructors and the second highest, "before most of my colleagues" was selected by 55.2% (Figure 1). Most instructors (69.0%) who taught in Spring Quarter used Tegrity in a single course, with a few using it in multiple courses (Figure 2). Among the instructors using Tegrity, 37.9% created fewer than five recordings over the course of the quarter, another 37.9% created between 5 and 15, and the remaining created more than 15 recordings (Figure 3). These numbers are consistent with usage data. The majority of instructors used personal equipment (rather than classroom equipment) to create recordings, whether in classroom, office, or residence (Figure 4). Several instructors who used Tegrity in Winter Quarter said they would like to see more classrooms, particularly large-lecture rooms, configured for Tegrity use.

Listening to Recordings

Among student survey respondents, the vast majority (79%) reported listening to recordings at their residence, rather than while on campus or while commuting (Figure 5). They also reported using PC computers (61.0%) and Mac computers (30.6%), much more frequently than tablets (2%) or smartphones (2.9%), indicating that Tegrity is seldom used on the go (Figure 6).

Goals for Using Tegrity

Instructors used Tegrity for both practical and pedagogical reasons—to maintain course continuity when classes could not meet, to make lectures accessible for remote or absent students, or to make complete recordings available to students for reviewing lectures after class. Instructors in both Winter and Spring Quarters used Tegrity predominantly to record lectures or other classroom activities, capturing both the instructor as he or she presented and anything displayed from their computer. Some faculty also created stand-alone lectures for students to watch outside of class, freeing up in-person class time for other activities. This popular pedagogical approach, called "flipping the classroom," was selected by 37.9% of Spring Quarter instructors as one of their goals for using Tegrity. Figure 7 shows the complete list of instructor goals.

Students primarily used Tegrity to review materials, whether to study for a quiz or exam, to review specific portions of lectures, or make up for class sessions they missed. In Winter Quarter we asked students to rank their goals for using Tegrity and "review material for classes I missed" was the top goal selected by students (54.5% selected this option). Part of the popularity of this item may be because several courses used Tegrity to make up for cancelled classes due to inclement weather that quarter. Students also wrote a several goals under "other" (17.8% selected this option) (Figure 8). To reflect the goals listed by students, we expanded this question in the Spring Quarter survey. On that survey, "review portions of recordings for classes I attended" (56.9%) was the top goal for using Tegrity, followed by "view recordings of class sessions I could not attend" (at 46.7%) (Figure 9). Interestingly, only 19.8% of students in Winter Quarter selected "review entire recording for a class I attended," while 42.3% of respondents in Spring Quarter selected this option. These data suggest that how courses were using Tegrity may have evolved as the year progressed.

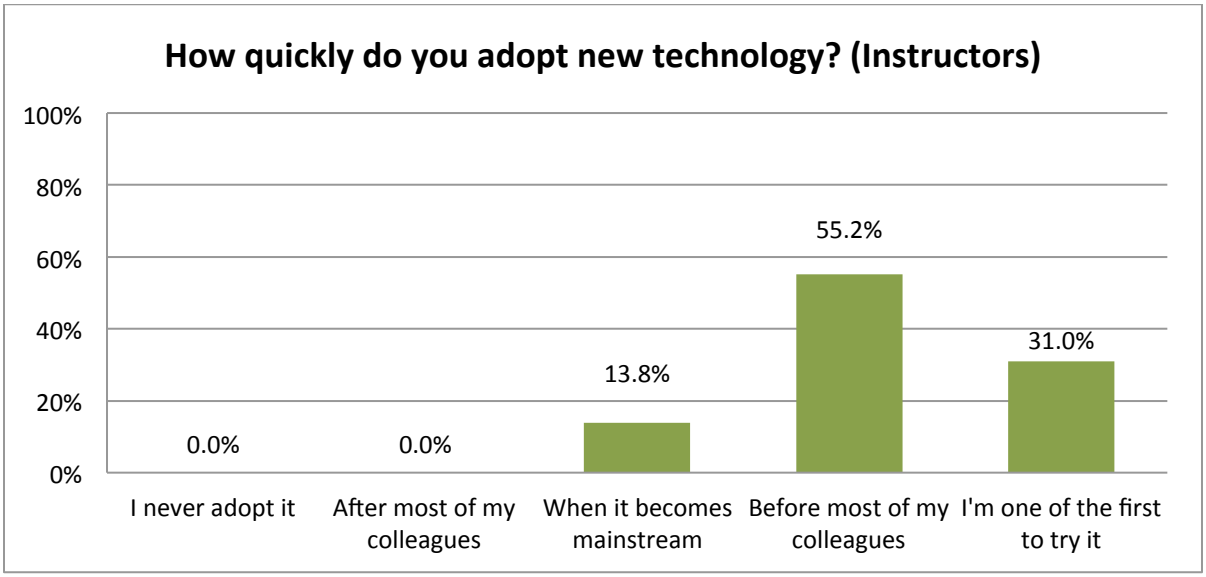
Table 1

Campus Location	Classes	Instructors	Recordings	Recording Duration (hours)
Bothell	12	10	79	102
Seattle	30	23	166	105
Tacoma	5	4	24	36
Winter Total	47	37	269	243
Bothell	14	10	75	91
Seattle	49	37	357	234
Tacoma	12	8	70	29
Spring Total	75	55	502	354
Grand Total	**122**	**83**	**771**	**597**

Table 2

Campus Location	Viewers	Viewing Duration (Hours)	Total Viewings
Bothell	153	694	1,733
Seattle	1,201	2,214	5,809
Tacoma	114	885	956
Winter Total	1,468	3,793	8,498
Bothell	113	474	925
Seattle	385	3,367	8,402
Tacoma	148	265	1,281
Spring Total	646	4,107	10,608
Grand Total	**2,114**	**7,900**	**19,106**

Figure 1



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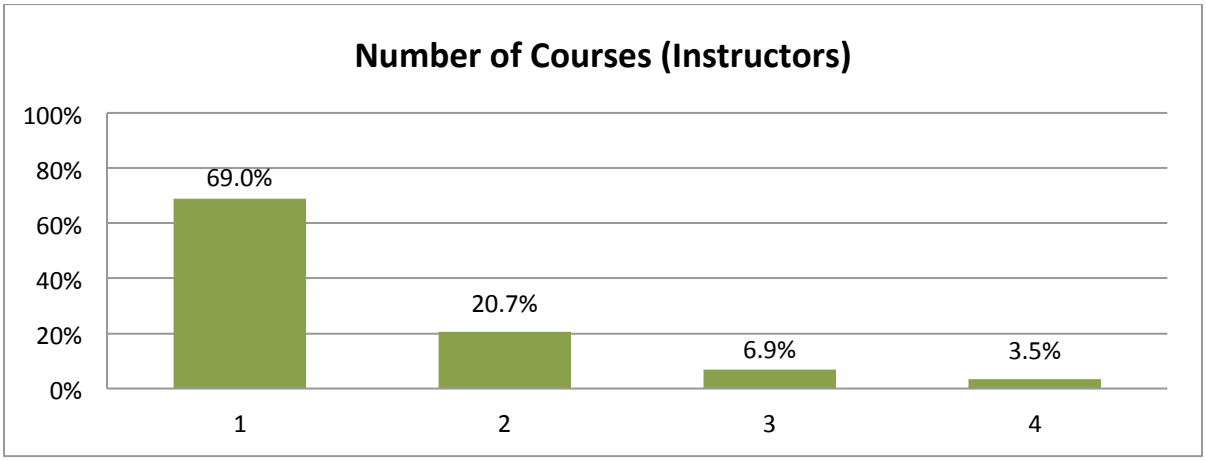

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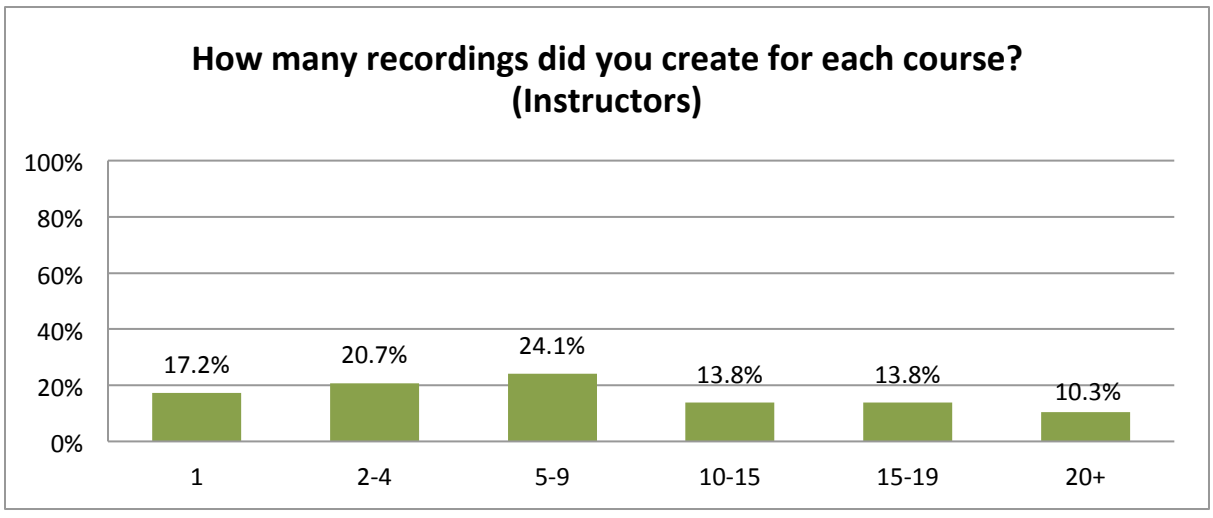

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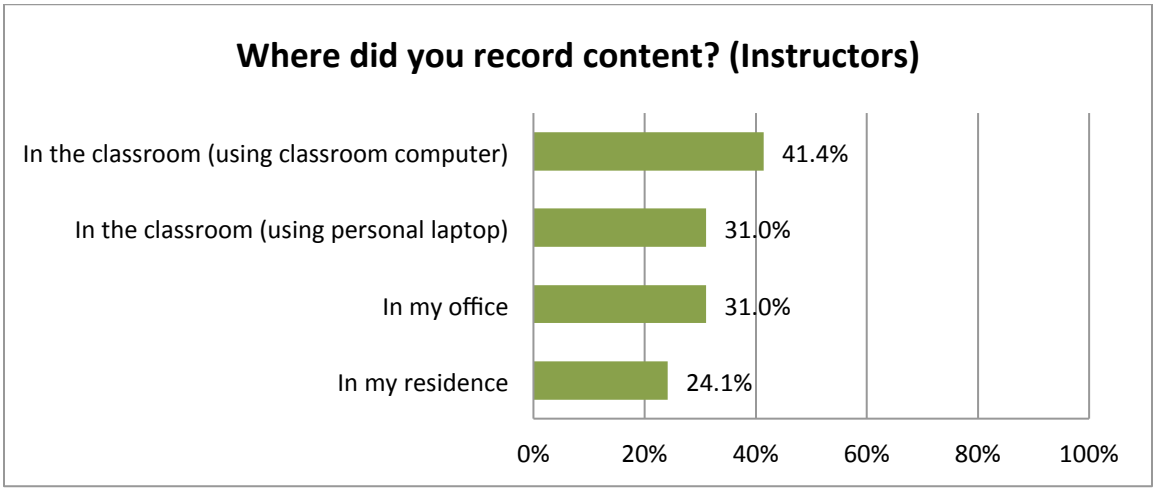

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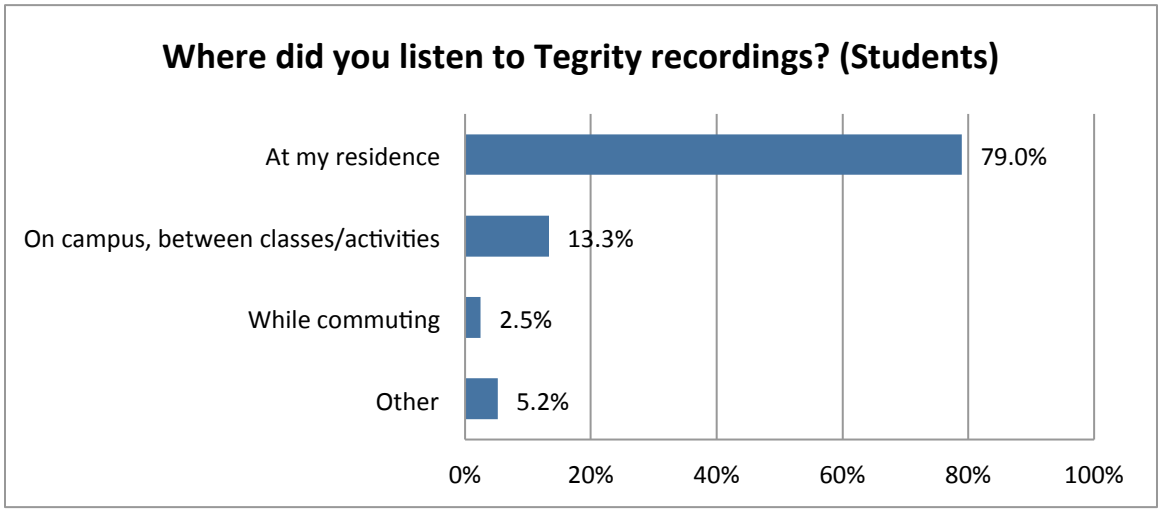

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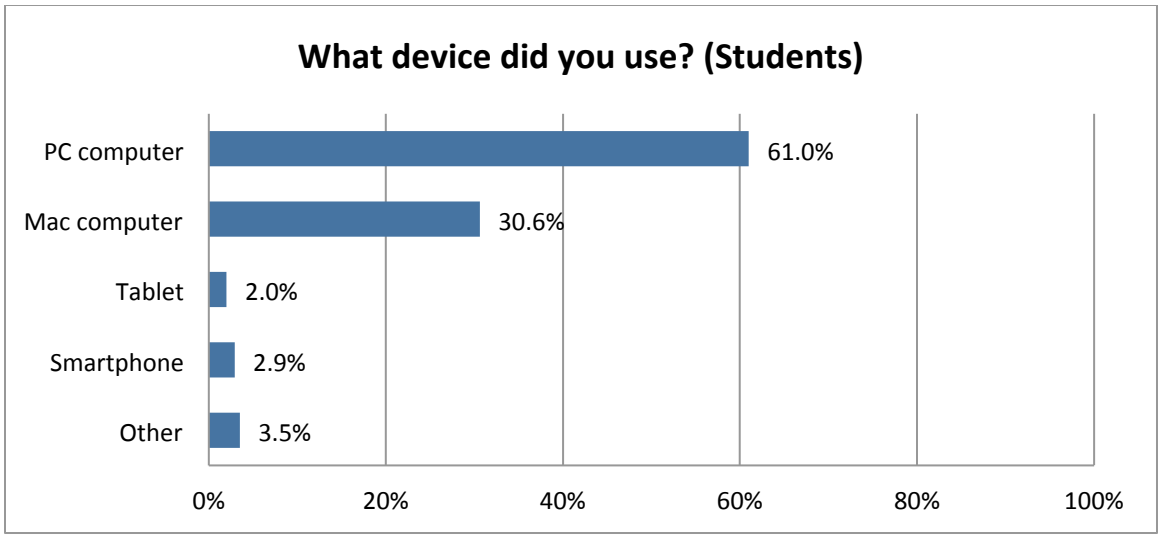

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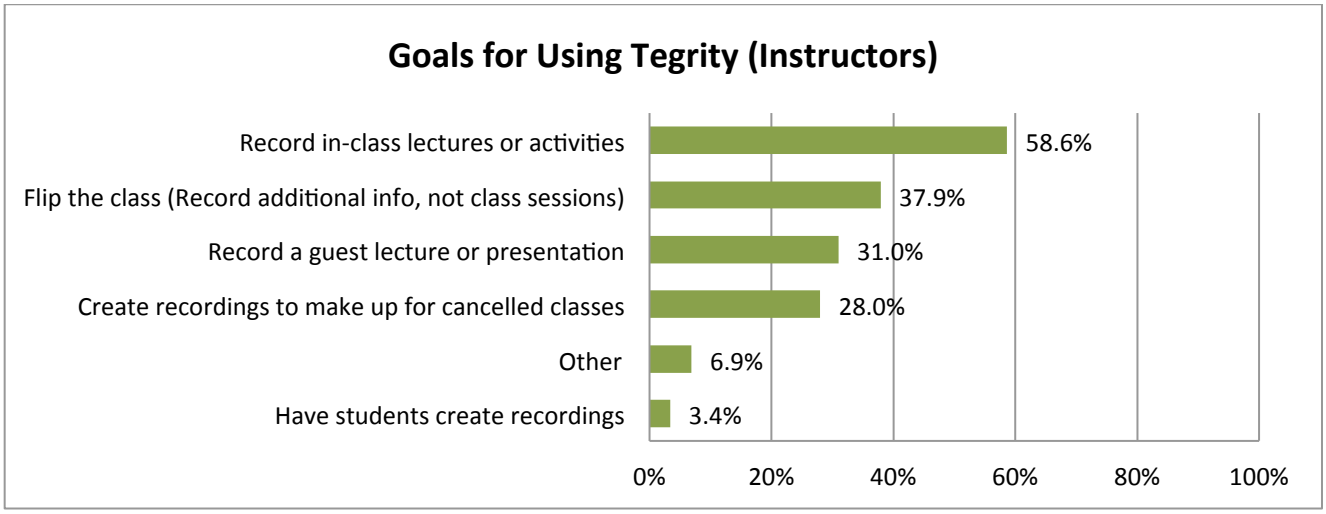

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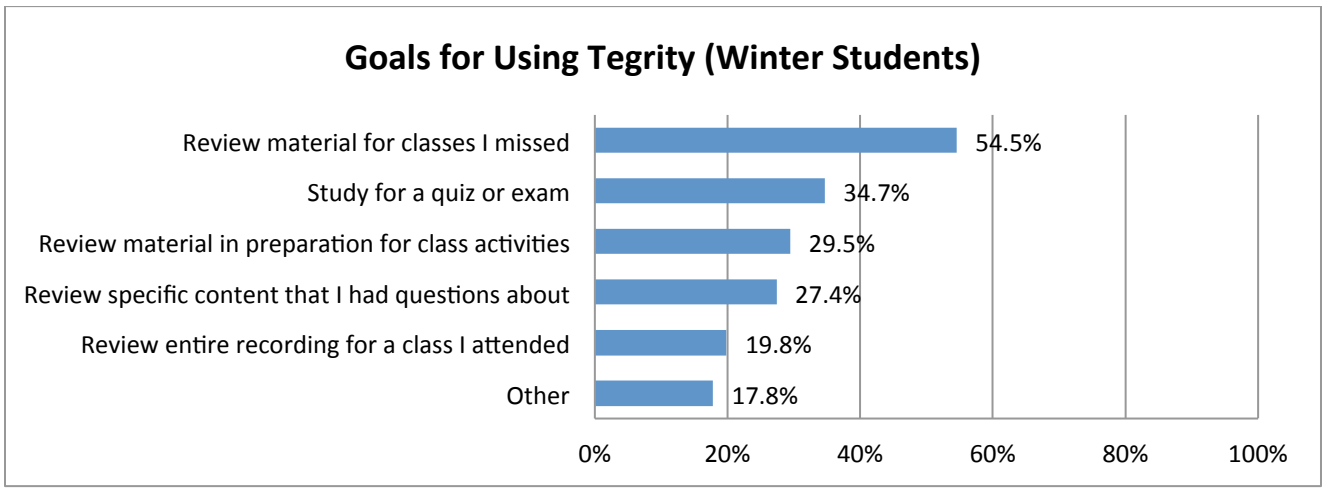

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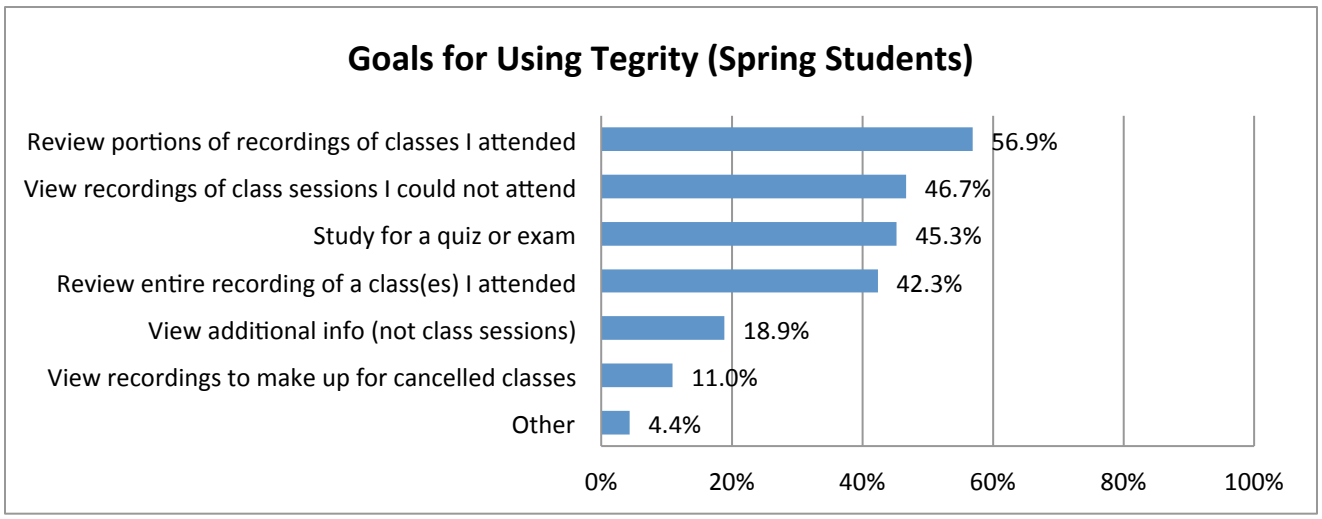


Student Learning

Students

The primary goal of UW-IT's current technology initiatives, including Tegrity, is to improve the student experience. Based on data collected to date, both instructors and students see Tegrity as a useful tool for supporting student learning. A large majority of students felt that "reviewing the Tegrity recordings contributed to my learning": 43% agreed with this statement and 40% strongly agreed (Figure 10). At the same time, it is important to note that most students do not view Tegrity as a replacement for in-class learning, but a valuable adjunct. Spring Quarter survey data suggest the dominant use of Tegrity was to review specific content from courses students attended (Figure 9). In survey comments students emphasized Tegrity's value in this area. According to one student, "having lecture recordings allows me to pay more attention to processing the lecture material and less time taking notes." Another found it was beneficial to "review material I did not understand the first time over." Another observed, "it enables me to re-play or pause the information to tailor to my own learning style/speed." When asked, a majority of students (64%) disagreed with the statement that the availability of Tegrity recordings made them less likely to attend class, while 21% had no opinion (Figure 11). At the same time, data on goals for using Tegrity (Figures 8 and 9) suggest that students do find Tegrity valuable for catching up when they do miss a class.

Instructors

Instructors reported their students' positive response to Tegrity as well; students told instructors that they valued the opportunity for closer review of content. For instance, one instructor reported that non-native English-speaking students appreciated the additional review that online recordings made possible. Another instructor observed, "[I liked] that I could make problem set solutions more dynamic and richer—not just text on a page. Students could hear my explanations as it was solved."

Tegrity also contributed to improving the student experience by allowing coursework to continue in spite of medical and weather emergencies that would have otherwise interrupted their learning. As noted earlier, Winter Quarter instructors appreciated the ability to recover time lost to illness or inclement weather by recording course material at home or in the office, or recording in the classroom and making recordings available to students who had to take an extended absence. One instructor said, "using Tegrity definitely helped me preserve the continuity of my class lectures during stormy weather and other emergencies." Of instructors who used Tegrity in Spring Quarter, 24% indicated that one of their goals for using Tegrity was to make up for cancelled classes (Figure 7).

Ease of Use

Students

The Winter and Spring Quarter student assessments also showed that students found Tegrity easy to use. We asked three different questions on our student surveys that gave insights on ease of use. First, we collected students' level of agreement with the statement "Tegrity was easy to use:" 88% agreed or strongly agreed with this statement, while 11% had no opinion, and another 11% disagreed or strongly disagreed (Figure 12). We also asked students to rate how easy the various features of Tegrity were to use, on a four-point scale from "(1) very difficult " to "(4) very easy." Among students who had used each feature, the majority found all features easy to use, with means in the 2.75 to 3.29 range. In particular, students rated "finding specific recordings" (3.29) and "logging into Tegrity" (3.11) as easy to accomplish (Figure 13). We also asked students if they required any support in using Tegrity; 91.7% reported that they needed no support (Figure 15). For the most part, the issues students encountered involved slow internet connections and some browser compatibility issues.

Instructors

Instructors in Winter and Spring Quarters found Tegrity easy to use—from installing the recorder to creating and posting recordings (Figure 14). The majority of Spring Quarter instructors (62%) reported that they primarily learned how to use Tegrity on their own, although some also participated in training or workshops (Figure 16). Overall, instructors were able to get started with little to no support. One instructor said, "After the first hour of working with Tegrity, the process became pretty intuitive." Another noted that a 30-minute consultation from support staff was all he needed to feel comfortable using the tool throughout the quarter. In write-in comments to the survey, a Spring Quarter instructor observed, "It is easy to use and students had no trouble viewing the videos."

Future Uses

Students

When asked about the future use of Tegrity at UW, students felt Tegrity would be useful in most of their courses; most students (88.2%) felt that more large lecture courses should use Tegrity, while only 1.7% felt that "no courses should use Tegrity." Students also saw Tegrity as being useful in online courses (61.3%) and small lecture courses (100 or fewer students) (53.2%) (Figure 17).

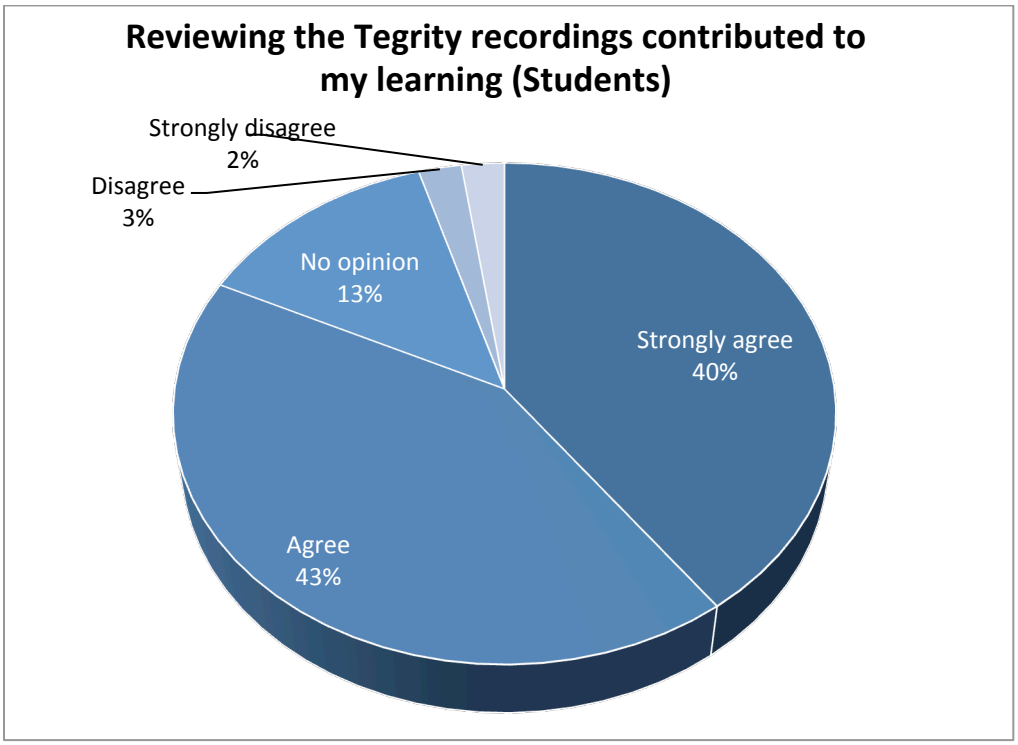
Instructors

Instructors responding to the Spring Quarter survey showed a similar trend to students, identifying Tegrity as most useful for large lectures, small lectures, and online courses (Figure 18). Several Winter Quarter instructors expressed interest in pre-recording material for future courses—to serve as introductions to lab

sessions, to provide additional examples to students, and/or to allow students to watch lectures in advance of class. An instructor who initially used Tegrity to make up for cancelled classes was interested in recording content for all of her classes. One instructor planned to use Tegrity to replace content during an upcoming absence.

When asked about how they would use Tegrity outside of a course, Spring Quarter instructors described situations such as sharing material with colleagues at other institutions, to demonstrate teaching skills during employment searches, training and seminars within departments, and informal instructional activities such as lab meetings. Instructors also noted the potential for using Tegrity to "flip" the classroom and use classroom time for active and collaborative learning rather than lecture delivery. One instructor summarized Tegrity as a "great tool for disseminating lecture content."

Figure 10



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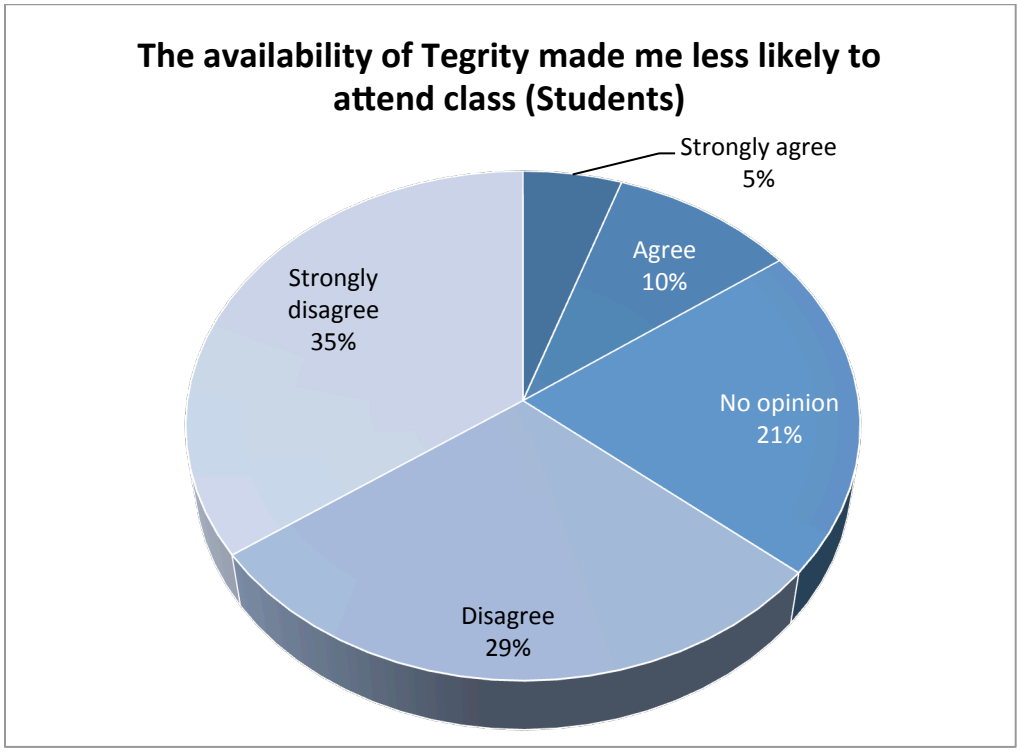

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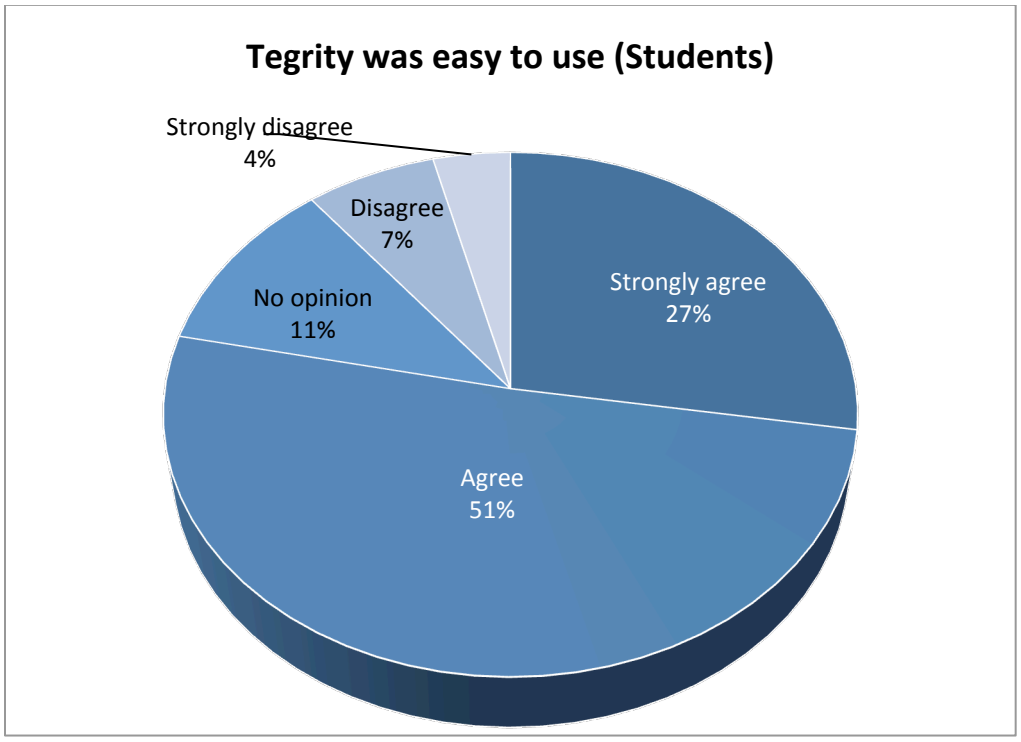

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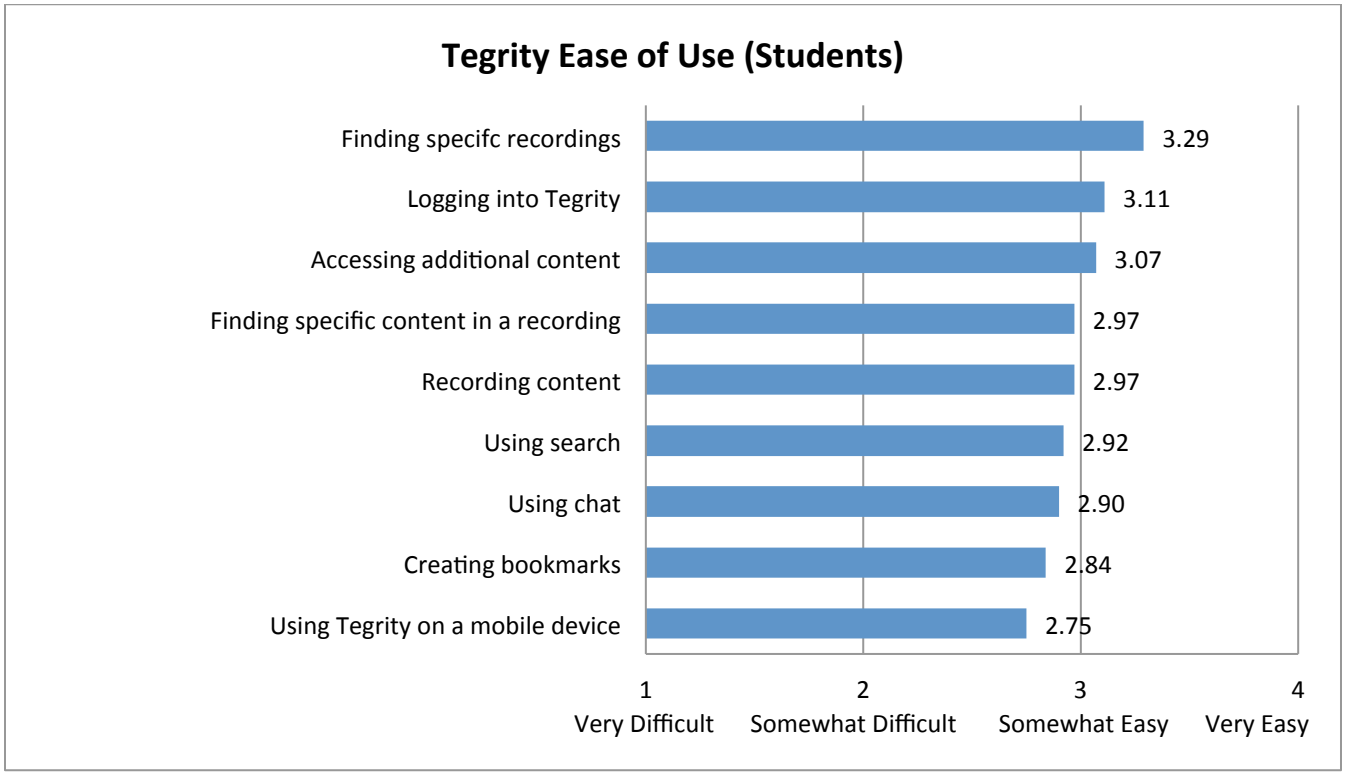

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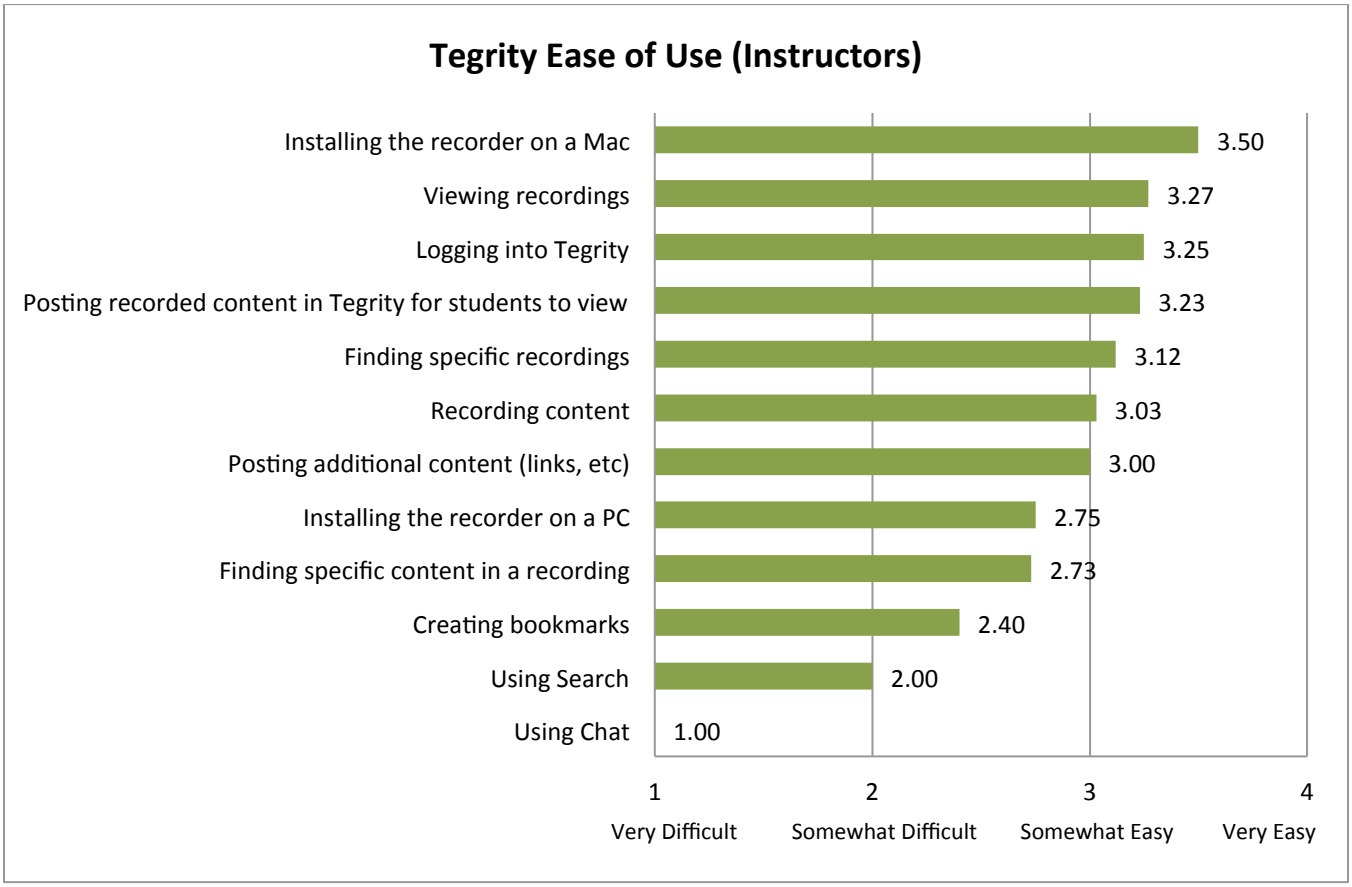

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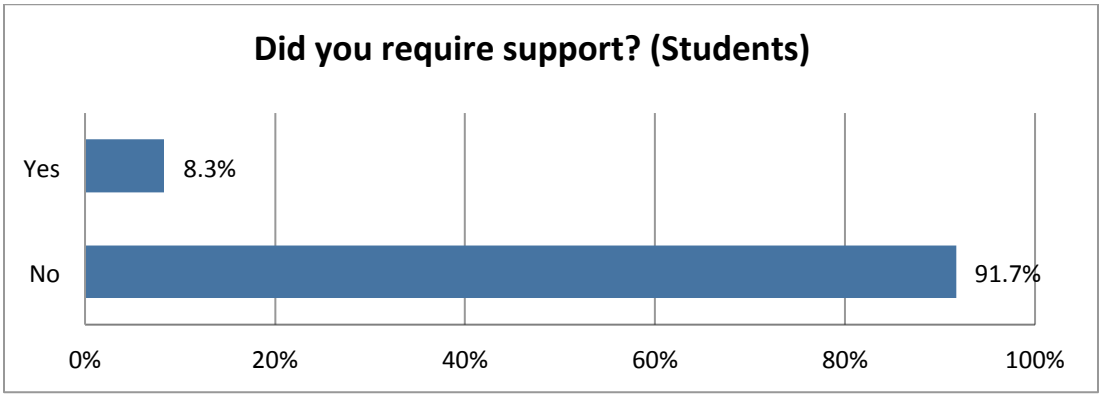

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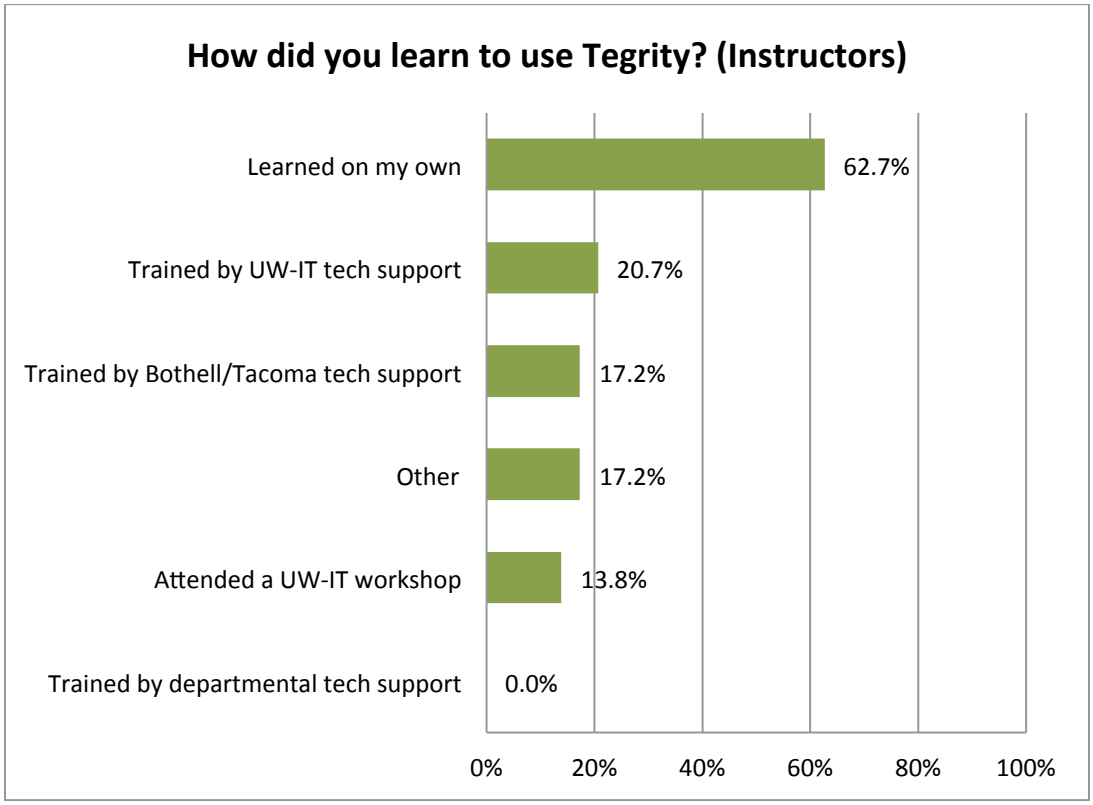

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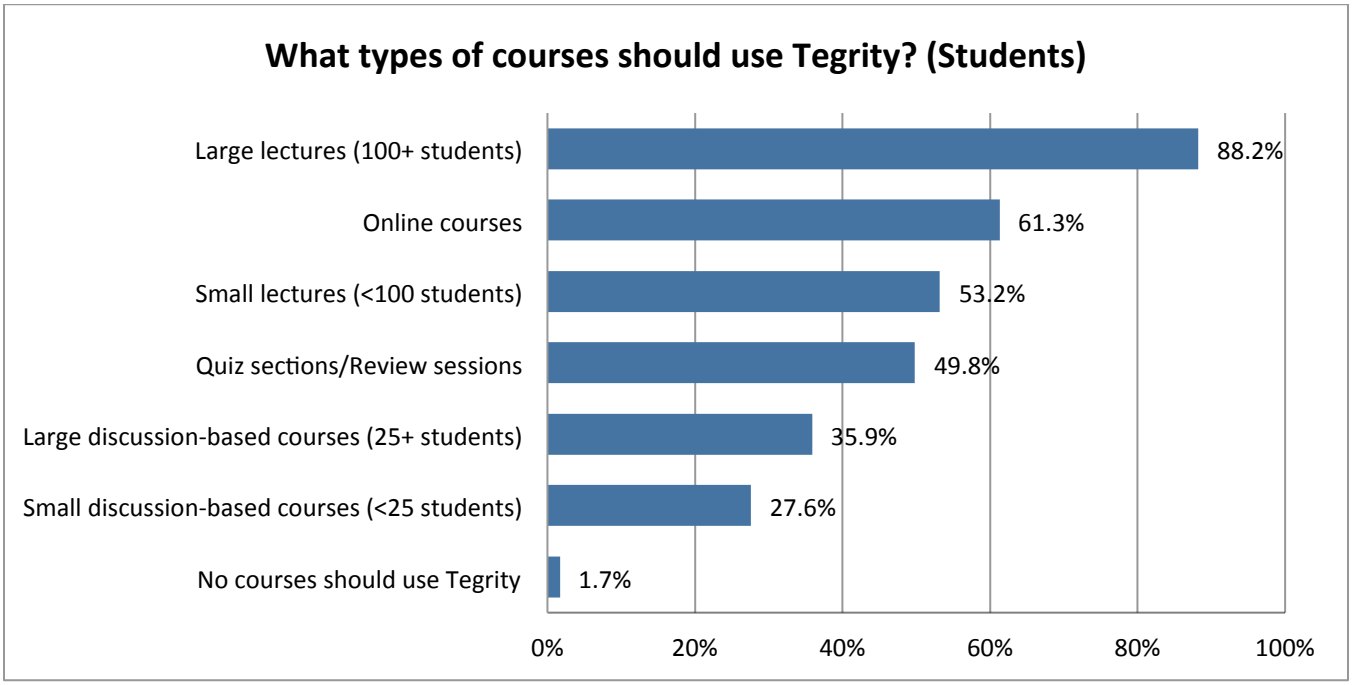

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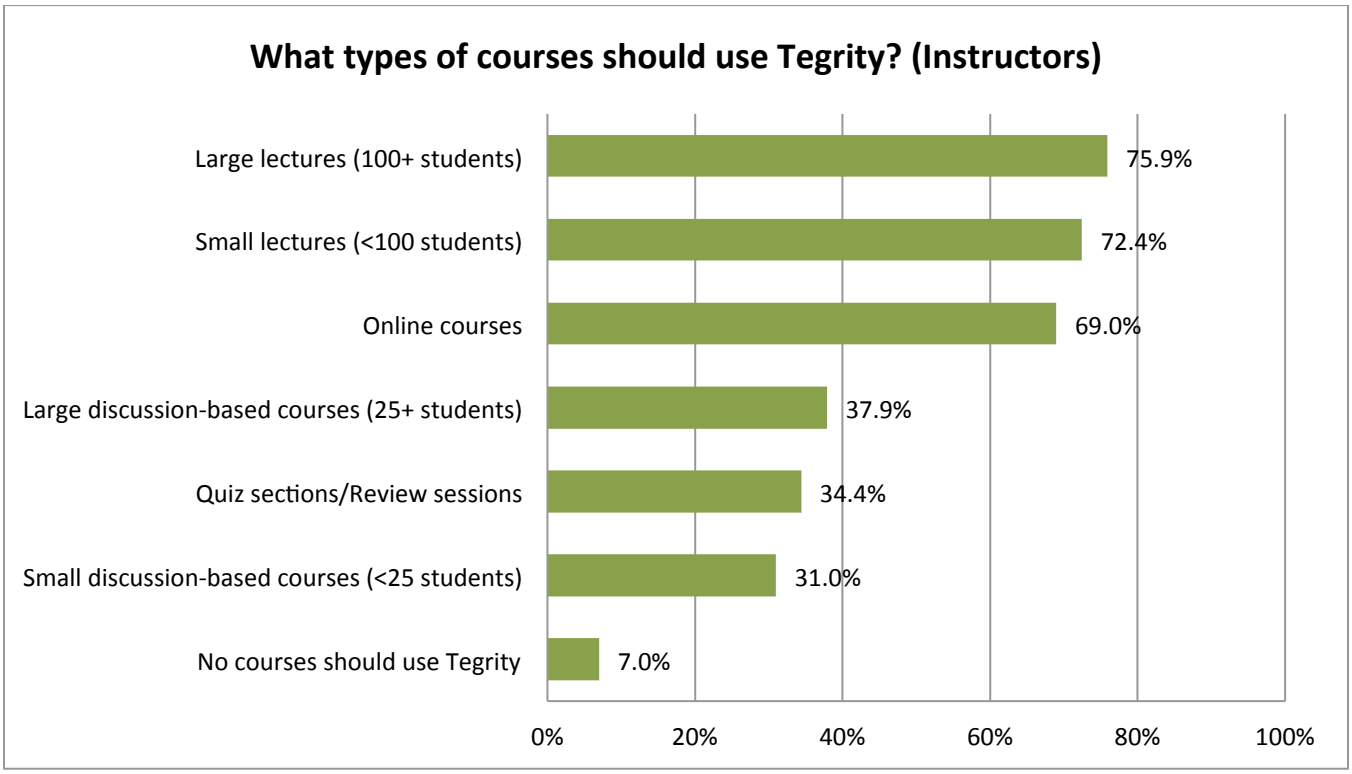

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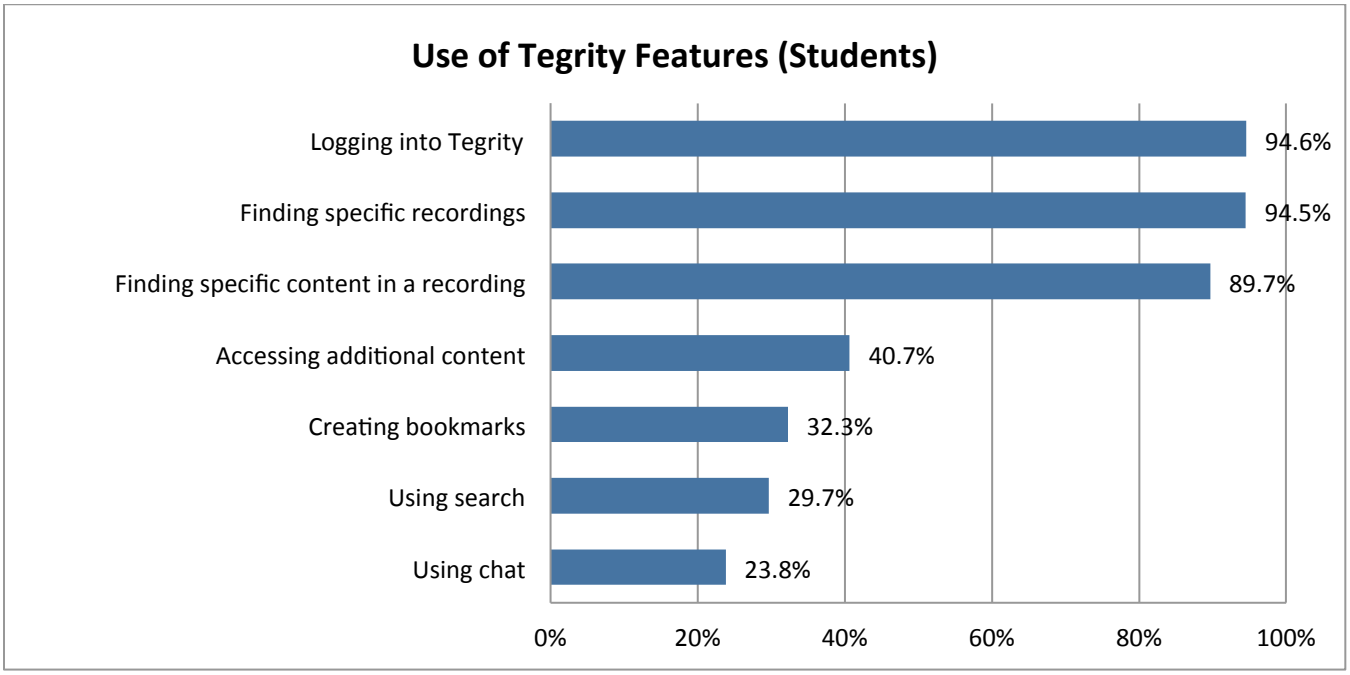

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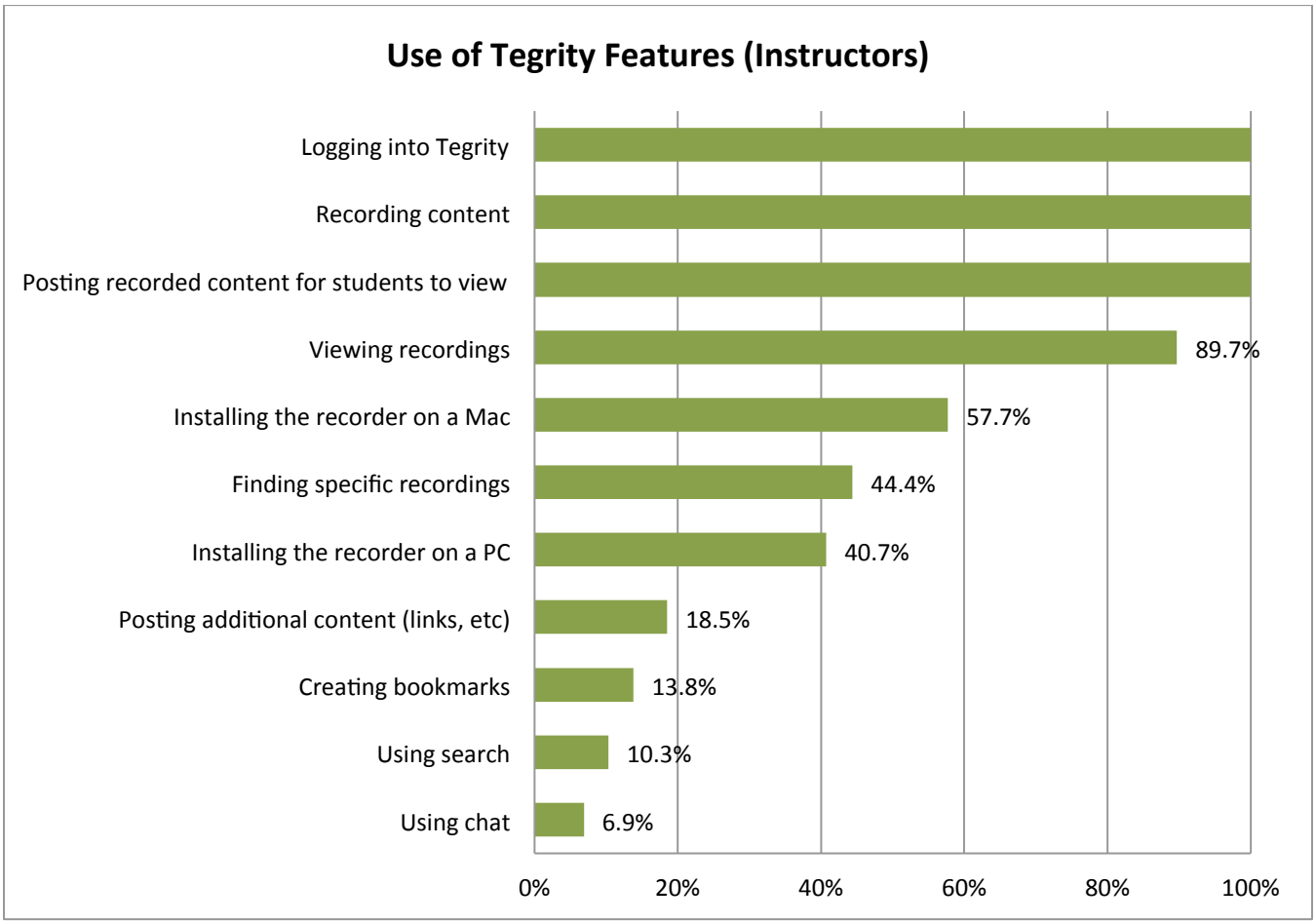

Current Limitations

Use of Advanced Features

While the student and instructor response to Tegrity was predominantly positive, the data do suggest some limitations to the current use of Tegrity and areas that could benefit from more focus in the future. Specifically, students and instructors both reported minimal use of many advanced features like bookmarking, search, and others, with many reporting that they did not use those features. For instance, only 32.3% of students and 13.8% of instructors created bookmarks, while only 29.7% of students and 10.3% of instructors used search (Figures 19 and 20). These patterns may indicate that these are not most compelling aspects of the software or that students are unaware of these features. Additionally, some individuals found these features more difficult to use. According to one instructor, "Tegrity is exceptionally easy to use to create and post recordings. The difficulty comes with editing, viewing and bookmarking recordings." However, this pattern was not universal. In response to the question about what they liked most about Tegrity, one instructor explicitly called out the "bookmarking and other navigation capabilities."

Student Recording

On the Spring Quarter instructor survey, only one instructor reported using Tegrity to have students record content (Figure 7). No instructors interviewed in Winter Quarter were using Tegrity for this purpose. On the Spring Quarter survey only three students reported that their instructor asked them to create recordings using Tegrity. These data suggest that instructors may not yet have considered use cases related to student creation of content. In addition, during the 2011-12 Academic Year Tegrity was not available for students use outside of courses.

Mobile Use

Student data showed that less than 5% of students used a tablet or smartphone to listen to Tegrity recordings (Figure 6). Additionally, only 13.3% listened to recordings while on campus and only 2.5% while commuting (Figure 5). While the ability to use a laptop computer to create a recording from many locations was a highly appealing quality of Tegrity for instructors, this interest did not translate to use on mobile devices—only 12% of instructors attempted to access Tegrity on a smartphone or tablet. These data suggest that mobile use is not currently a major draw for using Tegrity.

Classroom Equipment

One of the strengths instructors admire in Tegrity is that it can be used in unequipped classrooms, but some larger spaces would benefit from more in-room integration of Tegrity, such as tying into existing

sound or video systems. In surveys, several instructors noted that Tegrity is useful primarily for straightforward lecture, but that it is not adapted for capturing interactive components.

CONCLUSION

Tegrity is the go-to lecture capture and presentation recording solution for all three campuses. During the 2012-13 academic year, UW-IT will continue to promote and support the use of Tegrity in accordance with following recommendations, based on our assessment findings:

- **Promote Best Practices:** During the initial rollout, Tegrity was well-received by instructors and students, primarily because it made it easy to provide resources that had previously been unavailable for most classes—recordings of lectures, class activities, or additional materials. Students felt that the Tegrity recordings greatly enhanced their learning experience. During the 2012-13 Academic Year, UW-IT will more widely promote the use to Tegrity for providing students with materials for review, maintaining academic continuity, and supporting innovative pedagogies, such as flipping the classroom.

- **Expand Classroom Integration:** So far, Tegrity has been used more on personal computers (laptops or office equipment) than on classroom computers. One of Tegrity's greatest strengths is its ability to be used in any location, expanding the reach of lecture-capture technology. However, greater integration of Tegrity into classrooms, particularly on the Seattle campus, would be beneficial to instructors, especially in larger rooms where additional video or sound recording, beyond the capabilities of a laptop, would be helpful. While some rooms on campus are currently equipped with competing solutions, gradually working towards a more consistent platform would ease the learning curve for instructors.

- **Support Advanced Uses:** Further exploration into the use of advanced features is needed. Since few instructors and students are using options such as bookmarking, search, student recording, or mobile access, their potential benefits and limitations are largely unknown. Gathering additional data about the use of these features, particularly student creation of recordings, will be a goal for the 2012-2013 Academic Year.

In the time since we completed data collection for this assessment, UW-IT released Tegrity Manager, which allows for the creation of "course" spaces in Tegrity that can be used outside of official courses—vastly expanding the reach of this technology. Released in late Summer Quarter 2012, Tegrity Manager allows anyone with a UW NetID to use Tegrity for a variety of academic and administrative purposes: distributing recordings across multiple classes (for a larger curricular needs), creating recordings of workshops and trainings, sharing materials in a research content, and many other possibilities.

- **Assess Non-Course Use:** During the 2012-2013 Academic Year we will assess the use of Tegrity Manager, reporting on emerging practices and areas of need going forward.

If you are interested in learning more about Tegrity or Tegrity Manager, please visit the UW-IT support site at http://tegrity.uw.edu.