SQuAIR 2022

ONLINE TEACHING LAB EVALUATION & EFFICACY

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San Francisco State University
Center for Equity and Excellence in Teaching and Learning

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1. Introduction

Over the last two years, the QLT team at San Francisco State's Center for Equity and Excellence in Teaching and Learning (CEETL) has been in the process of pivoting from an unscalable, resource-intensive QLT course certification model to an approach focused on QLT professional development. Through two prior SQuAIR research projects, we learned that faculty engagement in professional development opportunities around QLT is associated with higher levels of student learning (as measured by course grades) compared to certification of individual courses (Wilson, Beatty, & Perry, 2019; Wilson & Beatty, 2017). These findings prompted us to focus more closely on the teacher's role within course design and delivery. After a thoughtful review of the literature, we made changes to the SF State QLT standards to further emphasize equity, inclusion, and humanizing online courses.

COVID19 created an unexpected opportunity to expand the conversation around QLT and quality online teaching and learning at SF State. The QLT team also had to find ways to immediately scale up QLT professional development to meet the high needs and demand of our campus community. CEETL Instructional Designers, Deb Perry and Heidi Fridriksson were the primary developers of the Online Teaching Lab (OTL). The OTL is a fully asynchronous, completely self-paced online course that provides a comprehensive research-based foundation in effective online teaching. This was a critical step to transition faculty to online learning. This was a trying time for many reasons, but for faculty that had never taught nor been a student in an online class, the requirement to shift online caused a great deal of anxiety and uncertainty. Many faculty were concerned about their ability to teach effectively – and uncertain about their students' ability to learn effectively – online. The OTL supported faculty in pivoting to emergency remote instruction and in preparing their mindsets for the transitional semesters ahead. The intense need of the campus teaching community during the Spring 2020 semester required faculty development on a scale that the Center for Equity and Excellence in Teaching and Learning (CEETL) had never previously delivered.

This report is organized into multiple sections. The first part is a more in-depth description of the OTL. The second section is an analysis of the evaluation participants responded to when they completed the lab. Third is an investigation of OTL participation and student grades. The conclusion focuses on how the OTL and these analyses fit within a larger framework, developed by the Association of College and University Educators (ACUE), for evaluating the impact of faculty development programs. After the analyses is a discussion and appendixes.

2. Online Teaching Lab Description

SF State's Center for Equity and Excellence in Teaching & Learning (CEETL) researched, designed, and delivered the OTL prior to the onset of the COVID19 pandemic. The OTL emerged out of two previous SQuAIR research projects, a yearlong literature review conducted by the SF State QLT team, a pilot program, and then another yearlong process of collaborative and peer-reviewed instructional design.

2.1. OTL Goals

Although the OTL helped prepare the campus community to teach online during COVID-19, and although this report includes an examination of the impact the OTL had on student grades, it was designed to accomplish neither of these goals. The OTL was designed to support faculty who were teaching online for the first time by providing a comprehensive research-based foundation in effective online teaching, focused on four key themes: resilient course design, humanizing online learning, engaging students with social presence and student interaction, and assessment strategies that foster intrinsic motivation for learning.

The original goals of the OTL, based on the QLT team's needs assessment of faculty in the pilot program, were:

1. To share evidence-based practices in effective online teaching
2. To increase faculty confidence in their ability to teach effectively online
3. To create a faculty learning community for mutual support and encouragement

2.2. OTL Participation

At the end of the Online Teaching Lab (OTL), participants were required to apply to claim their completion stipends and certificates. At the time of the writing of this report, there were 739 individual participants that completed the Online Teaching Lab. Most (682, 92% of OTL participants) were instructors of record for 1 or more course sections from F16 to S21. The other 57 OTL participants included librarians, GTAs, and other individuals that have not been listed as the instructor of record for academic course sections, but were eligible to participate.

From F16 to S21, there were 3,523 individual faculty that taught a total of 38,051 course sections that had a faculty name associated with the course. Therefore, 19% of the faculty that taught at least one course section during that period of time were course participants. However, this measure of participation does not consider changes in faculty over time, nor the number of course sections taught by OTL participants. During the period from F16 to S21, OTL participants taught 12,319 course sections (32% of total), while nonparticipants taught 25,732 course sections (68% of total). However, a more important measure of participation may be the balance of courses taught by OTL participants during the period of emergency remote instruction (F20 & S21 in this data). During that academic year (AY21), OTL participants taught 41% of course sections taught during that period of time. Therefore, nearly half of the course

sections (4 out of 10) taught during AY21 were taught by a faculty that participated in the OTL. OTL participants and nonparticipants did not significantly differ by the number of students in their course sections ($\bar{x}_{participants}$=30.00, $\bar{x}_{nonparticipants}$=30.06, p>.05).

3. Online Teaching Lab Evaluation

At the end of the Online Teaching Lab (OTL) participants were asked to complete an optional evaluation. After a process of cleaning responses for duplicates using the respondent name field, there were determined to be 509 unique respondents.

The evaluation instrument was delivered via Qualtrics and was comprised of 5 items. There were three closed-ended items and two open-ended items. This report includes an analysis of the first four items. The final item, "Please provide any additional feedback about the Lab here." did not consistently elicit responses and those responses were primarily expressing participant thanks (e.g., "Thanks for providing this resource. Not only is it helping us short-term, but imagine the long-term impact! May be the best thing to come out of the pandemic for SF State students and faculty.").

The first three closed-ended items identify a high level of participant satisfaction with the OTL. The analysis of the open-ended item provides additional information about what aspects of the OTL the faculty identified as most important for their professional development. The qualitative data from the open-ended item was coded using emergent codes and content analysis was applied to understand the relative frequency of the codes among the respondents.

3.1. The QLT Online Teaching Lab was a good use of my professional time.

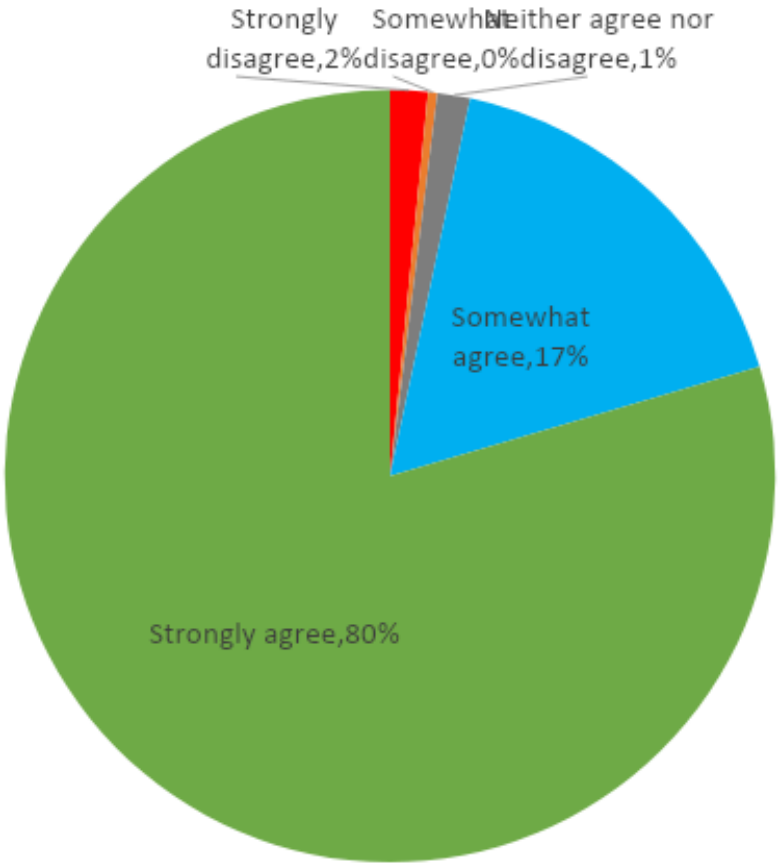

Figure 1. Good use of time

All of 509 respondents completed the first closed-ended item. Nearly all (97%) of respondents agreed or strongly agreed with the statement, "The QLT Online Teaching Lab was a good use of my professional time" (Figure 1).

3.2. I learned something in the Lab that will affect my teaching next semester.

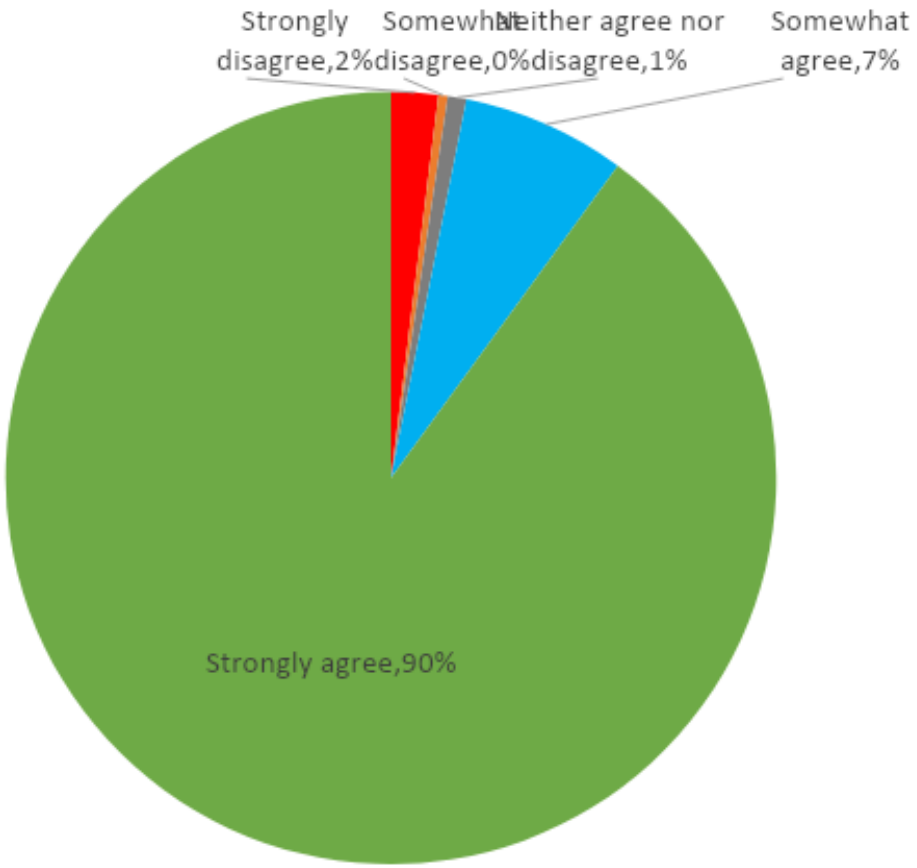

Figure 2. Affect teaching

All (509) respondents provided a response to the second item. Again, nearly all (97%) of respondents agreed or strongly agreed with the statement, "I learned something in the lab that will affect my teaching next semester" (Figure 2).

3.3. I would recommend the Lab to a colleague.

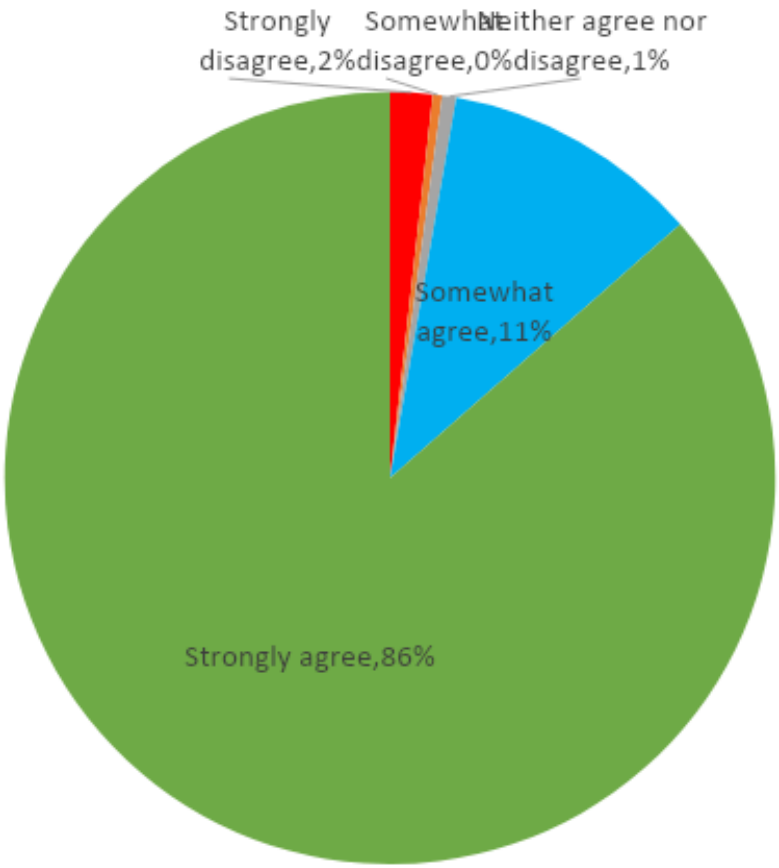

Figure 3. Recommend

Nearly all (508) respondents provided a response to the third item. Identical to the previous two items, 97% of respondents agreed or strongly agreed with the statement, "I would recommend the Lab to a colleague" (Figure 3).

3.4. What are the two most important things you learned from participating in the Lab?

All 509 respondents completed this open-ended item. Most respondents provided at least a couple of sentences. The responses had a median length of 32 words (maximum=234, minimum=2, $\bar{x} = 40.27$).

Each response was read multiple times and coded based on the different types of outcomes identified by the respondent. Individual responses most often identified more than one outcome and were therefore associated with more than one code. This set of codes were grouped into three overlapping areas of online learning: pedagogy, technology, and perspective. The pedagogical and technological outcomes are associated with the first goal of the OTL to share evidence-based practices in effective online teaching. The perspective outcomes are related to the second and third goals of the OTL to increase faculty confidence in their ability to teach effectively online, and to create a faculty learning community for mutual support and encouragement.

3.4.1. Pedagogy

A majority (n=386, 76%) of respondents indicated they learned something about pedagogy from the OTL. This included student engagement and intrinsic motivation, learning activities and assessments, humanizing the online classroom and teacher presence, creating community and peer-to-peer learning, University Design for Learning and access, and academic integrity.

Student Engagement and Intrinsic Motivation

The most frequently mentioned (n=143, 28%) pedagogical outcome was learning how to engage students and provide intrinsic motivation.

Some of the comments were explicitly focused on student engagement.

> "I especially appreciated the section on fostering *student engagement* and learned a number of specific strategies for doing so that I will incorporate into the classes that I teach this fall."

> "The chance to hear from other professors/lecturers on how they increase *class engagement*."
>
> "Getting concrete examples of ways to *engage students* online has helped me rework my course from the F2F."
>
> "I learn different ways and ideas to *engage and foster student participation*. One of the most difficult things in the spring semester was to maintain students engaged in the class, so the Lab gave me good tips."
>
> "The whole emphasis on *student engagement* and buy-in was really effective. I was unsure of how to do that in an online course, but now I'm more hopeful and will try some of these techniques."

Others were more focused on intrinsic motivation.

> "Fostering *intrinsic motivation* that connects my course to their professional growth."
>
> "The section about fostering *intrinsic motivation* helped me as I reflected on creating community in an online class and the value of figuring out ways that students can still learn from one another."
>
> "Reflecting on fostering *intrinsic motivation* helped me to think systematically about my reasoning behind the activities in my course."
>
> "I learned the importance of incorporating pedagogy that underscores *intrinsic motivation* ideas. How can I connect to the student? How can I connect the student to the material beyond a grade?"
>
> "One of the most important things that I learned is *intrinsic motivation*. I always think about how I can structure the extrinsic motivation, but I never thought about enhancing student's *intrinsic motivation*."

Regardless of the language used, the emphasis on moving towards intrinsic motivation to engage students connects with the latter topic of academic integrity and authentic learning.

Learning Activities and Assessment

The second most mentioned topic in pedagogical learning outcomes (n=143, 28%) focused on learning activities (e.g., assignments, quizzes, forums) and assessments of learning, including the scaffolding of frequent low stakes learning activities. While some comments were more general in nature, others focused on metacognition and student reflection, feedback, student

choice, outcomes-based activity design, communicating expectations, scaffolding, and student workload.

> “I learned different strategies to have students *reflect and be metacognitive* about their learning rather than the traditional "reflection" assignment we use.”
>
> “Next semester, I will likely make more of a point of integrating *metacognition* throughout to help them feel more in charge of their own learning, since ultimately, they are the ones that know what they're up to (even more so than in person).”
>
> “I've learned that *reflection* is an important part of ensuring that students really absorb what they've learned over the course of the semester. I always thought that reflection assignments were just busy work that teachers tacked on, but the research about reflection and *metacognition* presented here convinced me to give reflection activities a try.”
>
> “I was inspired to think of more assignments that are locally rooted, self-reflexive, and that bring in students own identities so that they feel a part of the course.”
>
> “The importance of making *assignments meaningful and useful* for students (and communicating that to them).”
>
> “I have never used *peer-to-peer assessments or self-assessments* and got some good ideas on how and why to use those forms of assessment.”
>
> “The importance of *feedback* sections that can help me improve my course regularly”
>
> “Just how important *feedback* can be when everything is online, something that the lab reinforced when the forums gave feedback.”
>
> “It's possible to give students a *choice* between different grading options.”
>
> “I also learned and love the idea that students have *choices* of how they will present their work. I love the buffet approach.”
>
> “Provide assignments that can be used outside of the class settings, e.g., portfolio or website, to showcase their work.”
>
> “Making professional communication *expectations* clear at the outset.”
>
> “I learned that there is much more to course transparency and clear *expectations* than I had been communicating in previous classes.”

> "I have a renewed commitment and awareness about what *scaffolding* an assignment requires in an online environment."
>
> "*Scaffolding* assignments and including lots of formative activities so students know I am concerned more with their learning than performance."

Humanizing the Class and Teacher Presence

Almost one-quarter (n=119, 23%) of respondents discussed the related concepts of humanizing their course and their classroom presence as the teacher.

> "Course *humanization* and organization of asynchronous class assignments and resources, will hopefully add personality to the course, and *engage* students and make them feel connected and excited to be in class."
>
> "One of the important things that i learned was the value of *humanizing* an online course through connectedness, engagement, and building a learning community. While creating learning experiences for the students is important, the environment in which they learn is crucial, so creating a climate in which students feel acknowledged and a sense of belonging will support their learning."
>
> "I already do this in my usual f2f classes, but I hadn't realized just how important making your online course more personal and *humanizing* is. I am also realizing how much more work goes into having to make one's course more human through an online class!"
>
> "The idea that I need to make a course reflect my ethos and personality from top to bottom (from the welcome message and the syllabus to the last day of class) was reinforced."
>
> "One of the things that I didn't like when I was a student in an asynchronous course (about 8 years ago) was that it didn't FEEL like an *instructor was present*. This course gave me some great ways to think about making myself felt in an online course."
>
> "I learned to be more transparent with my students so they do not think I am being punitive, but rather concerned for the learning."
>
> "I also learned that *presence*, both for the students and for the prof, are VITAL to making the class feel alive, active, and enjoyable."

Creating Community and Peer-to-Peer Learning

One-fifth (n=95, 19%) of respondents discussed creating community and peer-to-peer learning as a major learning outcome.

Some of the comments were focused on transforming the classroom into a community.

> "Having students introduce themselves online by posting bios is a good way to create a sense of *community*."
>
> "Creating interactive small groups using slack or other such tools to *facilitate student interaction*s offline."
>
> "I learned a lot from fellow participants about ways to build in *community* building exercises to foster growth and connection in the online environment."
>
> "I have been challenged to think a lot about creating a more *socially connected, personalized online experience*. Even as we moved to remote instruction this Spring, I counted on the synchronous parts of my instruction to provide most of the social connection and personalization. This course challenged my beliefs around this and I think will make me a much better online teacher."

Other comments were more focused on using peer-to-peer interaction to facilitate learning.

> "I found it valuable to learn techniques for building *collaborative, active learning opportunities* on iLearn (combined with the importance of teaching students how to collaborate)."
>
> "I gained very practical information about how to use iLearn to facilitate student engagement and how to use Zoom to do *meaningful group work*."
>
> "I learned about how to use Zoom breakout rooms and how to facilitate those discussions, which will be a major strategy for me to foster student-student interaction and discussion"

Universal Design for Learning and Accessibility

Universal Design for Learning (UDL) as a concept and access as an outcome were mentioned by one in ten (n=45, 9%) respondents. The concept of accessibility included both issues of disability as well as availability of technological resources.

> "The concept of *UDL* is extremely helpful for me to design my course content online."
>
> "I also found the *UDL* concepts of engagement, representation, and action/expression to be a helpful framework for approaching online learning."
>
> "I'd say the number one most important thing I learned from the Lab was the *Universal Design for Learning* and its components, in general as well as specific to online learning. While I had learned about models with similarities to UDL and incorporated them into my course work in the past, this was a theory I had not been familiar with and learning how to incorporate each of its three areas through course structuring was extremely useful."

"The DPRC converter tools are awesome and I did not know they existed. I will definitely use them."

"Just how important it is to be *inclusive of all learning styles*, especially during such challenging times as these, in order to keep students engaged."

"I learned a variety of ways to design my course with *student access* in mind. This means organizing iLearn well, but also having backup plans for bandwidth issue students might be facing. I might offer text-only chat rooms instead of Zoom meetings if any of my students have serious bandwidth issues."

"I learned different strategies on how to make my course *accessible* to students who cannot make synchronous sections."

Learning Theories and Strategies

Almost one in ten (n=40, 8%) responses mentioned a learning theory or overall course design strategy. This included formal theories, such as Communities of Inquiry and Trauma-Informed Learning, as well as strategies on how to balance synchronous and asynchronous class session time.

"I appreciated the *theoretical grounding* of these approaches with links to papers (critical to include in this type of faculty development exercise)."

"The course allowed me to discover aspects of *educational theory* that I can use both online and ideally offline in the near future."

"On a theoretical level: the *community of inquiry* model is something that I've encountered before, but being able to dive into it in the OTL and see how it applies to the development of online courses was EXCEEDINGLY useful."

"The importance of instructor engagement in student satisfaction and the *Community of Inquiry* Model."

"My favorite section was on *trauma informed learning*. This section really taught me the importance of being flexible with students and meeting them where they are. COVID has caused SO MUCH trauma for practically everyone."

"The section on *Trauma Informed Teaching* was super helpful. I used to teach high school and conversations/reflections around inclusive learning was common. I think that in higher education, sometimes there isn't enough knowledge, training, or reflecting on inclusive teaching, especially as it relates to trauma. Thank you for providing this information!"

"With the 10-page notes that I took, some of the techniques that I would like to try out are: 1. BOPPPS model (B) Bridge-in (Motivate) (O) Learning Outcome(s) (P) Pre-assessment (P) Post-assessment (P) Instructor-led Participatory Activities or Learner-led Participatory Activities (S) Summary/Closure."

"I learned some important principles about how online teaching differs from F2F teaching. These resources and ideas will help me immensely as I plan for online instruction in the fall."

"I also gained understanding of the more complex nuances and challenges around on-line teaching - e.g. the varied user platforms that need to be considered (laptop versus iPhone, low bandwidth vs. speedy internet, etc.) - and how I can create a course that can include multi-modal strategies for learning, beyond the Zoom platform."

"I learned that it is possible to have both synchronous and asynchronous methods in a single course."

"The Lab gave me frameworks and terminology to better understand some teaching strategies that I have used, strengthening my ability and confidence to expand on these strategies in my classes."

Academic Integrity

Academic integrity and cheating were a primary outcome for some respondents (n=33, 6%). This was a primary area of concern for some faculty at the start of the period of emergency remote instruction and relates to the SF State resolution focused on third-party remote proctoring.

"How to encourage *academic integrity* and mitigate *cheating* behavior, to some extent. In particular, hearing about the reasons why student cheat."

"Design for *(academic) integrity* was a new concept for me, and the mix of suggestions, practice, and advice was excellent. I plan to implement aspects of this, but mostly the value is that it changes MY attitude."

"I also really appreciated the discussions on *academic integrity*, and developing valuable, low-stakes assessments that keep students engaged and participating!"

"I found the section on assessment and *academic integrity* most enlightening and helpful, as it was an area I needed support in. Having those examples provided concrete ideas of how I could implement that in my course."

"I really appreciated the *academic integrity*, which helps shift away from punitive to supportive and creative strategies."

"I also really appreciated the section on *academic integrity* as a means to think about how I would assess students in a manner that prompted learning and intrinsic motivation."

"The second most important area for me was discussing the development of *academic integrity*, especially in understanding that academic integrity isn't just something we can make students have, but something we can cultivate and encourage through active curriculum development and choices."

3.4.2. Technology

More than half (n=287, 56%) of respondents mentioned technology as one of their primary learning outcomes. The technology outcomes focused on SF State's current learning management system (LMS), iLearn; video; and other technologies.

Learning Management System

Almost half (n=212, 42%) of respondents mentioned learning more about iLearn as a primary outcome. These included mentions of LMS design, as spell as specific features (e.g., completion checkboxes, participation logs, forums, glossary, gradebook). It is an open question about how much of the lessons learned from the OTL will transition from iLearn, SF State's current LMS, to the mandated future LMS, Canvas.

"How to use *iLearn*. I didn't know how to use iLearn."

"On a practical level, the tools that were introduced - in CONTEXT - that are available on *iLearn* are really helpful and because I have now seen them IN ACTION I will use them."

"My biggest take-away is how much I've learned about how to use *iLearn*. It has been a thorn in my side for years and now I feel a lot better about how to use this platform and also where to go to have my questions answered."

"I thought I was pretty knowledgeable about *iLearn* but you have shown me things that will work in my course that I didn't know about."

“How to better organize my *iLearn* page visually for computer or mobile users.”

“I also generally learned so much about good *iLearn site design,* some which I have implemented and students praised (e.g., checkboxes, visual appeal, images, variety of ways to engage with material), and some of which I will continue to implement.”

“I learned how to make my ‘document dump’ *iLearn* into a more human, asynchronous, interactive learning hub. Second, learning to use iLearn’s Page/Predict and *Activity Completion* tools should make my site better for all students, by working better on mobile devices, and helping them see what they have/have not completed among course activities.”

“I learned (or relearned) the importance of *structural clarity* so that students know, basically intuitively, what to do--at least after a week or two”

“I added '*Completion Tracking*' to my *iLearn* sites, which I feel will be a great benefit to my students.”

“Thank you for showing me how to read all of the new *forum* posts on one page! I rarely used *forums* because I found it time consuming to click back and forth to check for new posts. I am more likely to use forums now!”

“Having the experience of writing a *forum* post, reading *forums* of others, and replying to their *forums* has really added to my experience and my process of reflection. I provide many opportunities for students to write reflections in my courses; now that I will be asking them to post these reflections on the *forum*, they will be able to get feedback not only from me, but from their peers. Also, the *forums* provide opportunities for the students to get to know one another in their online courses.”

“I also learned more about how to make online discussion *forums* feel like a valuable assignment, rather than just something they have to do to get their points.”

“I learned more about *student participation log*s, and how they can be used to track student engagement.”

“The things that translate best to all fields are *iLearn* tactics (*glossary* feature, put files in one folder, *activity completion*, right-side panel customization, search function in *forums*).”

“There were some very practical topics (like how to use the *gradebook in iLearn* or the *activity completion* checklist features) which I think will be very valuable in teaching next semester!”

“By far the coolest thing was the student introduction *glossary*.”

> "I found the slide decks about giving feedback in *iLearn* and *iLearn* tools for *tracking engagement* particularly helpful."

> "I have learned about *activity completion* to help track progress of students viewing material instead of digging through activity logs."

> "It really helped me in my own classes to see how you all set up the teaching lab with the *activity boxes* (which I didn't know existed before this Lab!) and the *forum* setup. So just participating in the lab helped me make my own iLearn pages more organized."

Video and Other Technology

One-fifth (n=103, 20%) of respondents' comments included a reference to or focused on learning about video or some other technology as one of their primary learning outcomes. Comments ranged from neophytes having their first experience learning about video to participants that learned specific features, such as how to create captioning.

> "It was very valuable to get a break down of creating *videos*. Both the instruction on how to do so and the information on the best designs and tips."

> "I learned that it is ok to not be perfect in the *videos*. It is more important to be real and transparent as you would in classroom."

> "I learnt how to make *videos* short but impactful, and the different programs/software for *video* making and editing."

> "Distinguishing between content that is right for video and content that is not."

> "The *video*-making techniques that I practiced in the lab will change my teaching for the better."

> "The section on *video* lectures was helpful as well because I've taken online classes where the video lectures just were not very good, so I liked exploring different ways to make a video lecture more exciting."

Other types of software that were mentioned include Zoom, Google Slides and Docs, Slack, Padlet, Voicethread, Camtasia, MediaSite, and PollEverywhere.

> "I learned how to create and edit instructional videos using ZOOM, MediaSite, and Camtasia."

> "I really appreciated the insights on Zoom's waiting room, breakout rooms, and polling."

"…creative ways to keep students engaged (e.g., using platforms like Camtasia, using quizzes, etc.)."

3.4.3. Perspective

About one-quarter (n=136, 27%) of respondents mentioned that the OTL impacted their perspective in some manner. Although this was not as frequently mentioned of a topic as the other two groups of primary learning outcomes, this group of outcomes includes some powerful impacts. This area includes learning from examples of others' teaching, developing self-efficacy to teach online, gaining a student's perspective, and having an opportunity to reflect on teaching.

Examples

One in six (n=89, 17%) respondents discussed learning from the lab, as a model of good online teaching.

"The OTL was an essential model for me as I have designed my courses since last summer 2020… I found myself repeating some activities and revisiting the resources for each time I designed courses. The iLearn course page was a wonderful example."

"The modeling and transparency in this course were such important elements for me. I am thinking carefully about how I can incorporate modeling and transparency into my classes this fall and beyond."

"Lots of really awesome ideas to use (from the facilitators and colleagues' forums)."

"I also learned a lot about effective ways to use iLearn and organize an online course because the Lab facilitators modeled those strategies well."

"From my Lab facilitators I have learned how to model every assignment for students."

"The design of the lab with the activity checkpoints made navigation smooth and I'm working to employ that for future too."

> "The modeling of the lab in iLearn taught me quite a bit! The content layout, pedagogy, discussions and weekly Zoom check-in calls really modeled a smooth, well organized, literature supported learning environment. Another important aspect of the lab were the facilitators. All involved were very knowledgeable, pleasant, and positive. It was great to have a short interaction each week, after completing the online discussions, watching the videos, reading through the Slides and other cited sources. It was very organized, informative, and amazing!"

Respondents also described the value they gained from hearing about what their colleagues did in their classes. Given that teaching is often a craft done individually, it was a rare opportunity for many to learn from others about their teaching practices.

> "My fellow teachers have great strategies for teaching too, and it was great to be able to dip into some of them."

> "I think one of the most helpful aspects of the class was experiencing the diversity of thinking about assignments, the creativity of my peers in crafting assignments."

> "I was really struck by the commonalities and differences among teachers in disparate fields, how classes that seem to have nothing in common really share a lot (not just pedagogically but in how many "ways in" there can be for students)."

> "I liked reading the posts of colleagues. It gave me new ideas, which I appreciated."

> "I also enjoyed learning from colleagues about what they are doing in their courses, that was one of the best and most beneficial things about this training."

> "I also really loved the Faculty Voices podcasts, especially because I could listen as I was making my coffee or tidying up and thus not sit at the screen the whole time."

> "It is a relief and a bit overwhelming to see all the ways faculty teach and engage online."

> "I learned that I belong to an amazing community of people who are all here for each other to support and assist each other in any and every way possible."

> "I really appreciated the opportunity to see my colleagues' responses to prompts, especially in contexts that are outside of my particular department."

> "I loved how all the assignments were structured as forums so I could see what everyone else was doing. I feel like my brain is boring sometimes and I was inspired by what other people are doing."

Online Teaching Self-Efficacy

Before the period of emergency remote instruction, a minority of faculty taught at SF State using a fully online or hybrid learning mode. Therefore, it should perhaps not be a surprise that a significant group of faculty (n=80, 16%) reported that the OTL provided an opportunity for them to grow and shift their fear of online teaching to a new perception of confidence in their ability to do so successfully.

> "Online teaching is not as overwhelming as it first seems... it can be learned in small steps, and I can improve on it over time. "

> "The thought of transitioning over to online was pretty daunting in late May. Now I feel like I can do it, and I have a clearer picture of what I'm aiming for with my online teaching. I am appreciative of this opportunity, especially at this moment when I really needed an extra push. Thank you."

> "I've learned is that I need to be confident in my knowledge of course content, rather than panicking about my shortcomings in delivering that content. I'm not reinventing the wheel here. After 30 years of teaching, I need to stay positive and focus on what I do know, and not what I don't."

> "I gained courage to do an intro video to me and the class. Still scared about it."

> "I gained a sense of the range of tools for teaching online, which made it seem manageable rather than overwhelming. I now have ideas of how to convert different parts of my F2F teaching to online."

> "On a macro level, I'm so grateful that this resource exists and that everyone else is also likely struggling with the transition to remote learning and teaching; the OTL was a friendly and useful reminder that there is a community of peers also learning… I think we'll all be better for these challenges because it's helped foster innovative and dynamic approaches to learning."

> "I learned that many of my ideas were intuitively sound, but that the extra push of acknowledging and organizing along those lines really improved the experience for my students."

Student Perspective

A small group of respondents indicated that they appreciated to learn what it was like to participate in an online course (n=14, 3%). Previous research from the Online Education Committee identified that faculty have often never taken an online college course for credit, so this was likely a new experience for many of them.

> "It was amazing to be a student in an online course (I'd never taken one) and see what could feel overwhelming (giant forums, many forums, many little tasks) and what helped

make things manageable (small things checkboxes, notes on video lengths before watching each, etc.)."

"Having not taken a fully on-line course myself, seeing a course from the perspective of a student was really helpful."

"Going through the course asynchronously provided for me a nice example of what it feels to be a student; particularly as it relates to the look and feel of how the course flows and what is needed to make the course learnings accessible."

Opportunity to Reflect on Teaching

Finally, a small group of respondents (n=9, 2%) indicated that the OTL was an opportunity for them to reflect on teaching.

"The thinking/reflecting that I did as I read others posts and then created my own on the various topics really got me thinking and cemented my learning!"

"I learned how important it is to do professional development like this - it's easy to think we have it all figured out but when we see more resources, engage with other colleagues, and reflect on our own classes it's helpful to see where we can be better."

"I think the most important thing from this course was that it forced me to reflect and evaluate on how I was doing with online teaching. I was prompted to push myself and think of more ways to engage students and how to make my course more interactive. It also made me think about my goals with each assignment and prompted me to better articulate these to students."

"The most important thing that I got from it was that it gave me a space for me to stop and think about my teaching, about who am I as an educator and how I want to show that in my courses."

3.5. OTL Evaluation Summary

The first three closed-ended evaluations items indicate participants had a high level of satisfaction with the OTL. Almost all (97%) agreed or strongly agreed that the OTL was a good use of their professional time, will affect their teaching next semester, and that they would recommend the lab to a colleague. The analysis of the open-ended question identified that they perceived their primary learning outcomes as focused on pedagogy, technology, and opportunities for gaining a new perspective, all of which indicate that the OTL succeeded in meeting its objectives.

However, self-reported data are just one way to evaluate a faculty development program, such as the OTL. The next section focuses on the relationship of the OTL with student grades. This retrospective analysis was prompted by the CSU's focus on reducing DFWs as an outcome. Although this was not an outcome that the OTL was designed to address, given the current focus on DFW grades, it was of interest to understand if there was a relationship between OTL participation and student grades in the current period of study.

4. Online Teaching Lab and Student Grades

The primary question that this report addresses is whether the Online Teaching Lab (OTL) had an impact. While the previous analysis of the OTL evaluation responses provided by participants at the end of the OTL strongly suggest that faculty participants perceived the lab as effective and achieving the outcomes it was designed to address, an analysis of student grade data did not find a significant relationship between faculty completing the OTL and a change in the percentage of students that earned DFW grades.

4.1. Methods

Grade data came from SF State Institutional Research. Average grade was calculated summing grade points associated with each grade earned divided by the total number of grades earned per section. The average DFW% for each course was calculated as the number of D+, D, D-, F, WU, IC, and NC grades given divided by the total number of grades given by course section. Change in DFW% was calculated as the change before the pandemic compared to after the first semester of emergency remote instruction. The change in average DFW% was operationalized using multiple steps. If a faculty member taught more than one course in a semester, then the DFW% for each course was averaged to determine a semester average for each faculty. The change in DFW% by faculty was then calculated as the average DFW% for the F20 and S21 semesters minus the average for the DFW% for F16 through F19.

The sample of faculty that were included in this analysis included only faculty that had taught at least one course with associated grades during F20 and S21 and at least one course with associated grades from F16 to F19.

4.2. Results

Grading results are organized into two sections, a review of changes in overall grades across time and differences in grading between participants and nonparticipants.

4.2.1. Grades Across Time

The average percent of students within each course section earning a DFW grade increased during AY21 (Figure 4). The average DFW% hovered around 6% from S15 to S17, elevated to about 7% from F17 to S20, and then increased to over 8% during the F20 and S21 semesters (Figure 4).

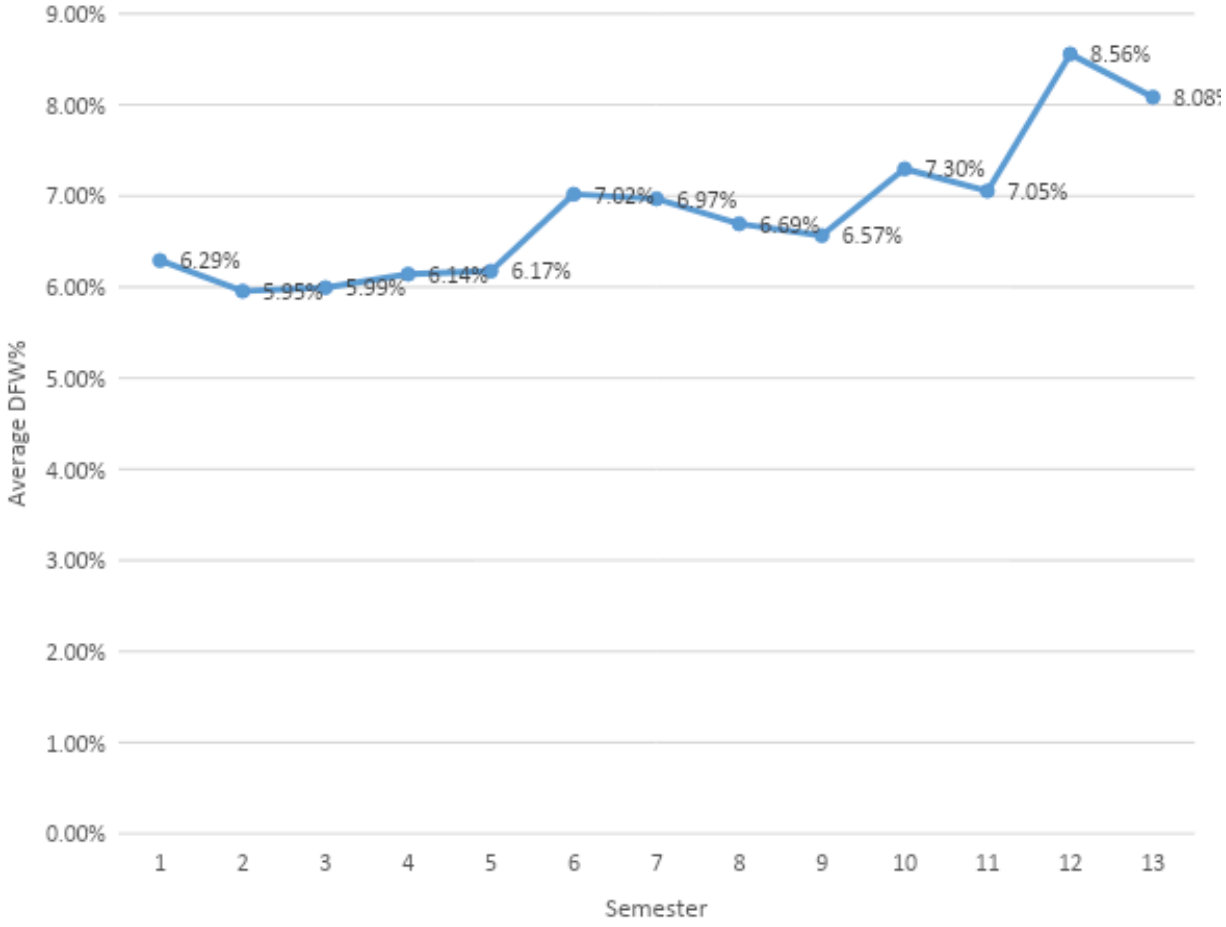

Figure 4. Average DFW%

Part of this change may be attributed to the nearly complete shift to online learning modes (Figure 5). Until F20, most courses sections were taught face-to-face (Figure 5).

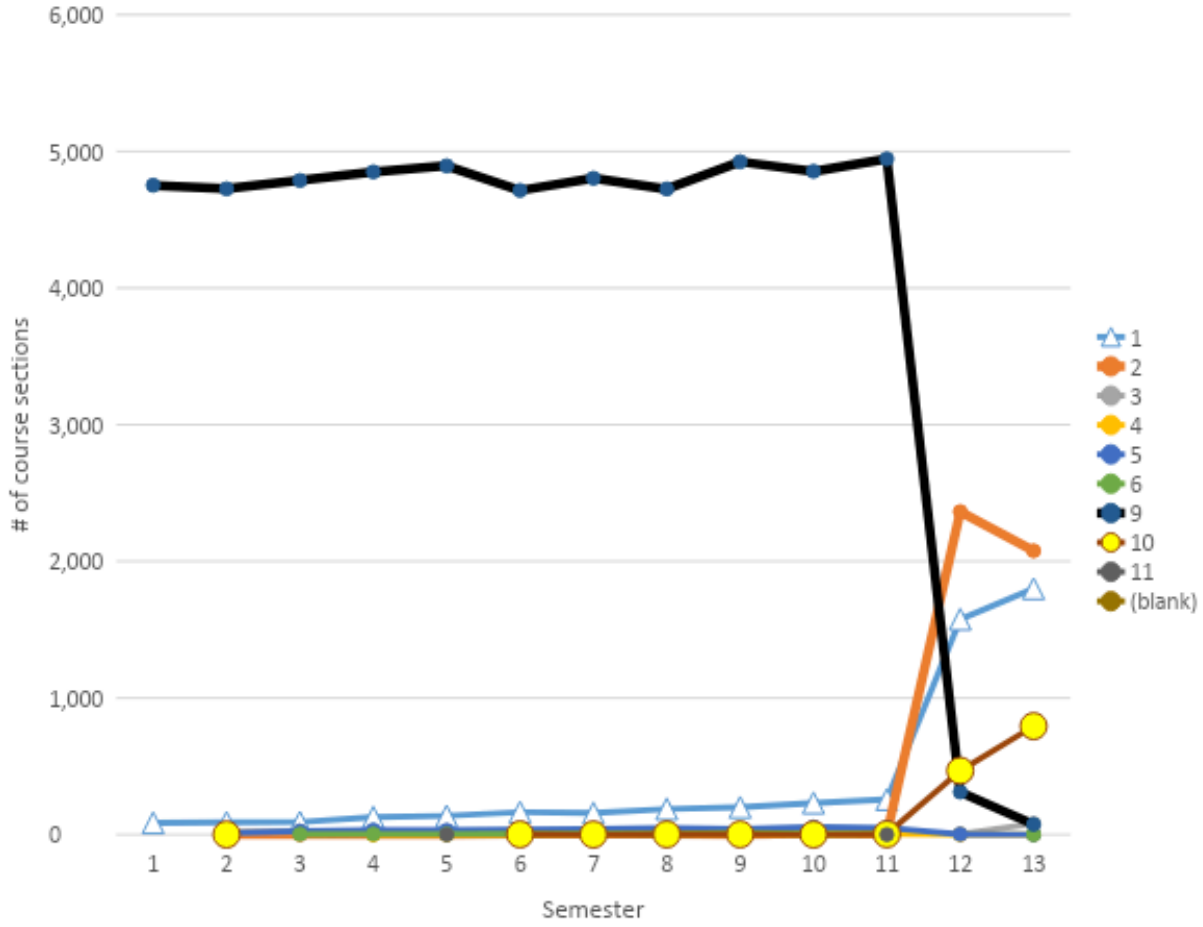

Figure 5. Number of Course Sections by Learning Mode

However, a deeper analysis of the association of learning mode with DFW% indicates that average DFW% by learning modes shifted during AY21 (Figure 6). Before the pandemic, the average DFW% was relatively stable for courses taught using the two most frequently chosen learning modes, face-to-face (LM09) and asynchronous online (LM01, Figure 6). During AY21, the average DFW% dropped for these two learning modes. In contrast, the average DFW% for fully online synchronous courses (LM02) increased significantly during AY21. The average DFW% for bichronous (LM10) courses have varied considerably over time, but this may be due to so few courses being taught using this learning mode before the period of emergency remote learning.

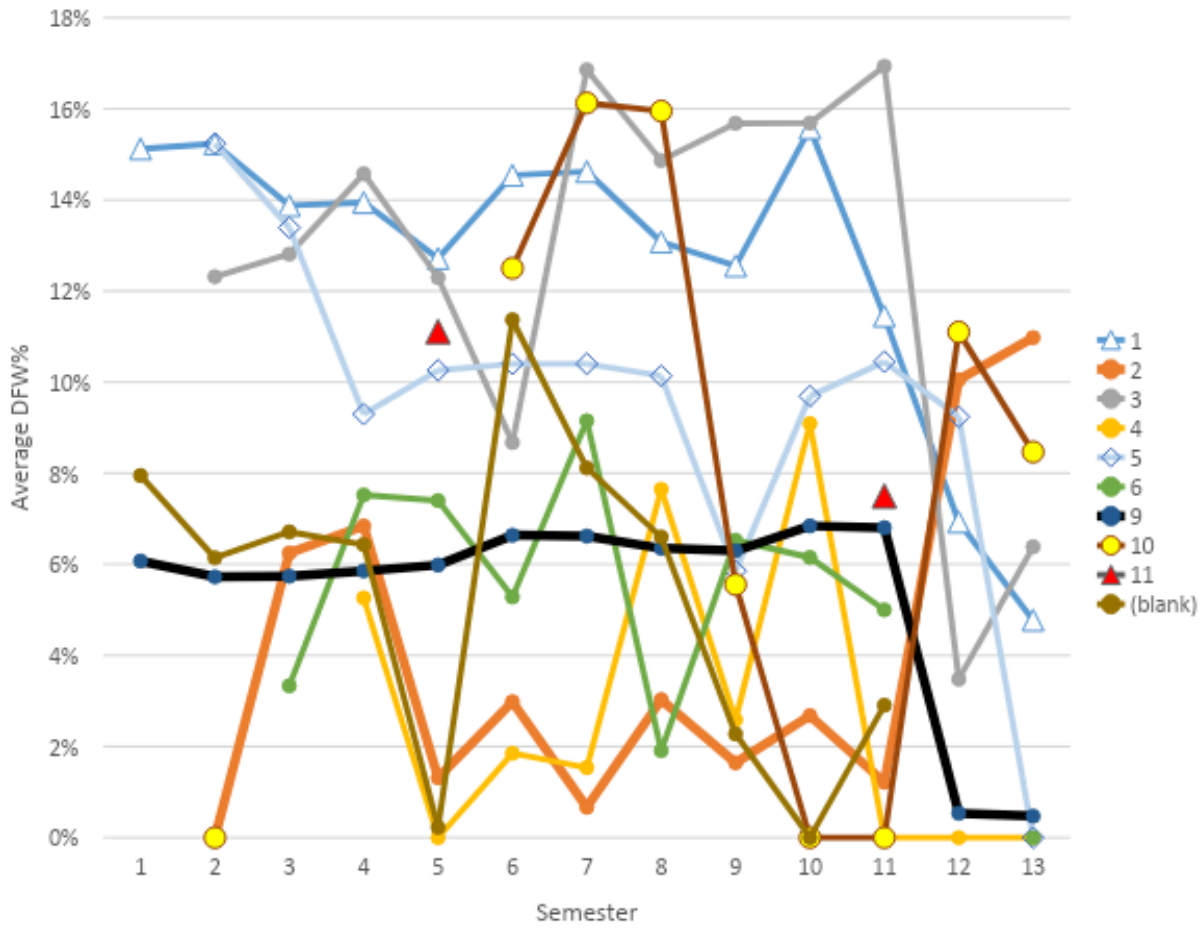

Figure 6. Average DFW% by Learning Mode

4.2.2. Grade Differences Between OTL Participants and Nonparticipants

Table 1. Differences between participants and nonparticipants

Variable	Participant Mean	Nonparticipant Mean	Significance
Avg Grade >3.90	11.01%	12.19%	0.001**
Average Grade	3.26	3.25	0.185
URM Avg Grade	3.19	3.17	0.006**
nonURM Avg Grade	3.28	3.28	0.377
URM gap Avg Grade	0.08	0.11	<.001**
DFW%	8.91%	8.78%	0.267
URM DFW%	9.98%	10.12%	0.407
nonURM DFW%	8.74%	8.26%	<.001**
URM gap DFW%	1.16%	1.74%	<.001**

There are multiple ways to examine grades (Table 1). OTL participants had a significantly lower percentage of course sections they taught have an average grade of greater than 3.90 ($\bar{x}_{participants}$=11.01%, $\bar{x}_{nonparticipants}$=12.19%, p<.01). OTL participants were more likely to assign a range of grades compared to nonparticipants.

OTL participants and nonparticipants did not significantly differ by the average grade by section overall ($\bar{x}_{participants}$=3.26, $\bar{x}_{nonparticipants}$=3.25, p>.05) nor for average grade earned by nonURM students ($\bar{x}_{participants}$=3.28, $\bar{x}_{nonparticipants}$=3.28, p<.01). However, URM students earned significantly higher average grades in sections taught by OTL participants ($\bar{x}_{participants}$=3.19, $\bar{x}_{nonparticipants}$=3.17, p<.01) and the gap in average grades between students identified as URM and other students was significantly lower for OTL participants and nonparticipants ($\bar{x}_{participants}$ =0.08, $\bar{x}_{nonparticipants}$=0.11, p<.01).

The overall percentage of students that earned DFW grades did not differ by OTL participation ($\bar{x}_{participants}$=8.91%, $\bar{x}_{nonparticipants}$=8.78%, p>.05) nor did it differ by OTL participation for URM students ($\bar{x}_{participants}$=9.98%, $\bar{x}_{nonparticipants}$=10.12%, p>.05). However, a significantly higher percentage of nonURM students earned DFW grades in OTL participant course sections ($\bar{x}_{participants}$=8.74%, $\bar{x}_{nonparticipants}$=8.26%, p<.01) and the URM gap in DFW% was significantly higher for nonparticipants ($\bar{x}_{participants}$=1.16%, $\bar{x}_{nonparticipants}$=1.74%, p<.01).

Although there were some overall grading differences identified between participants and nonparticipants, the primary measure of interest is whether the OTL impacted that grading.

The average change in DFW% for all faculty (n=1,508) before to during the period of emergency remote instruction was an increase of 1.77%. The mean change for faculty that did not complete the Online Teaching Lab ($\bar{x}$=1.79%, n=937) was slightly larger than for those that did complete the OTL ($\bar{x}$=1.72%, n=571); however, the difference between these two groups was not statistically significant (p>.05).

4.3. OTL and Student Grades Discussion

One explanation of the findings is that the shift to online learning during the period of emergency remote learning is responsible for changes in DFW% and the OTL did not buffer against this shift of learning mode, but this was a complex time and there are multiple explanations for the grade data.

- Participation in the OTL may have a *cumulative impact* when faculty engaged in additional CEETL faculty development opportunities over time. This cumulative impact was not measured by the current study.
- It could be that the *delay* between taking the OTL and the impact on students' grades is greater than is assumed in the current study. In pedagogical research, researchers commonly find that there is a gap between learning new pedagogical strategies and implementing them. Therefore, it is possible that we may see improvements in student grades emerge over time.
- It could also be that the effect of the OTL is obscured by the *monetary incentives* to participate made available through the emergency federal funding (CARES and HEERF Acts). Some faculty that primarily participated in the lab to receive the stipend may have minimized their participation and chosen not to implement any of the lab's recommended teaching strategies.
- It may be that there are significant differences for some types of *faculty*, but not others (e.g., lecturer vs. T/TT faculty, more recent vs. long-term faculty).
- There are multiple *course-level variables* that could be further analyzed. As previously stated, the average DFW% for different types of learning modes shifted considerably. Therefore, it could be that there were significant differences in the impact of participation in the OTL by learning mode. It could also be that that analyzing change in DFW% by variables such as level (lower, upper, graduate), discipline (physics vs. philosophy), or enrollment size (<20 vs. >500) could identify significant differences.
- It is also possible that the OTL could have impacted faculty teaching; however, it did not impact their *grading*. The OTL was not designed to focus on grading, but on teaching effectiveness. Grades may likely not be perfectly associated with student learning across faculty. Rather, grades may be a nested indicator of student achievement within a particular course taught by a particular faculty. The data make it clear that some faculty are relatively lenient graders, all or nearly all their students earn the maximum grade of A, while other faculty are more difficult graders. If this is the case, then, even if the OTL caused faculty to become more effective teachers, the distribution of grades may not have shifted.
- It is possible that a different indicator of student learning would be more appropriate to measure teaching efficacy (e.g., average grades, student evaluation scores, equity gaps in DFW%).
- Finally, it is impossible not to acknowledge that the shift to emergency remote instruction occurred because we are experiencing a global pandemic. Changes in DFW% may be due to exogenous factors associated with the health, economic, and social factors inherent with this turbulent epoch. For example, when considering the relationship between learning modes and DFW%, it may be that learning modes were

chosen for reasons that also impacted DFW%. During the pandemic, students reported a greater need for flexibility, which may explain why the DFW% dropped in the online learning mode that has the greatest flexibility and lowest bandwidth requirements (asynchronous online LM01), while it increased in the online learning modes with less flexibility and higher-bandwidth requirements (synchronous LM02 and bichronous online LM10).

5. Conclusions

Was the OTL successful? The answer depends on what outcomes you are evaluating. While the evaluation responses indicate a high level of effectiveness measured against the OTL's original outcomes of sharing effective pedagogy and technology skills, increasing faculty confidence, and creating a faculty learning community, the grade data did not find a significant relationship between faculty participation and changes in student grades.

The Association of College and University Educators (ACUE) proposed a methodology for evaluating faculty development from faculty engagement, learning and implementation through student engagement and outcomes, to institutional outcomes (MacCormack, Snow, Gyurko, & Sekel, 2018; Figure 7).

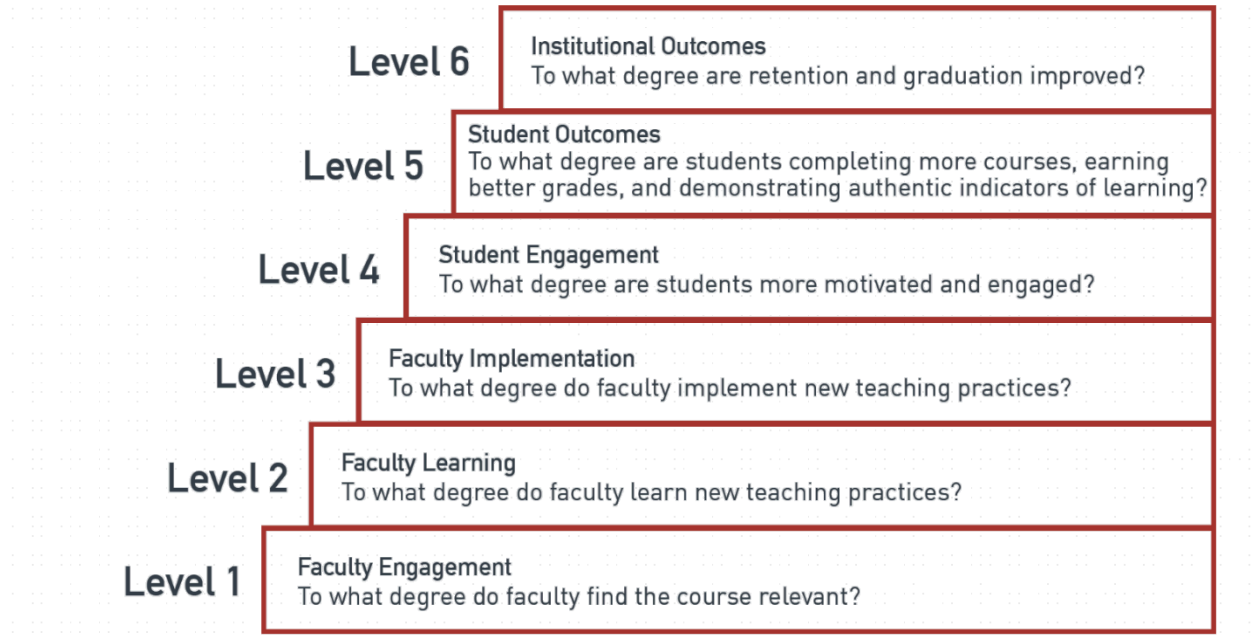

Figure 7. ACUE's six level evaluation approach (MacCormack, Snow, Gyurko, & Sekel, 2018)

ACUE's evaluation measures suggest that the OTL achieved successful faculty engagement (level 1) and faculty learning (level 2), as measured by the OTL Post-Course survey instrument

discussed in section 3 of this report. The SF State QLT team sees faculty implementation (level 3) as a potentially generative area for future research since this is an area we have not yet investigated. SF State did survey students in the Fall 2021 semester about their satisfaction with remote learning and found that 71% of students (n = 3,096) reported being satisfied with remote learning at SF State (level 4). As previously discussed in section 4, there was no significant change in student outcomes, as measured by the proxy of grades (level 5).

Given everything that was occurring during this period of time, perhaps the true measure of the OTL's success is that classes continued to be taught, with a high level of student satisfaction, even after the midsemester shift in Spring 2020 to remote modes of teaching. Online learning was likely a new mode for most faculty, so the OTL provided the skills, attitudinal support and community for faculty to continue learning and teaching during this emergency period.

This is not to discount the importance of student success. That is an important objective that is of concern to all of us. Therefore, the current review of the OTL suggests that while the OTL supports and may even be a necessary step to improve student and institutional outcomes, it is not a sufficient step. Further research and additional interventions may be needed to promote faculty implementation of new pedagogies, investigate student motivation and engagement, and increase the transparency and consistency of grading across course sections so that student outcomes can be better evaluated and the overall DFW rate potentially reduced.

6. References

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