Eberly Center

Teaching Excellence & Educational Innovation

Diversity
Equity
Inclusion
Belonging

Student
Learning
Experience

Data
Informed

Technology
Enhanced

Annual Report
2022
23

Foster & Sustain

a culture of teaching

"The Eberly Center intentionally prioritizes resources for 1-on-1 consultation services to foster sustained and impactful relationships with instructors."

"Over a three year period, we consulted with 840 faculty and staff, 1/3 of whom maintained ongoing collaborations with us for 2-3 years."

Chad Hershock, PhD
Executive Director

The Eberly Center cultivates diversity, equity, inclusion, and belonging (DEIB), supports educational innovation, and enhances teaching and learning at CMU and beyond through 1-on-1 consultation services, group programs, DIY web resources, and scholarship.

Our expertise creatively combines data science, technology-enhanced learning, and research-based learning principles to meet emerging educational development needs.

Our DEIB- and student-centered approach is evidence-based, collaborative, and formative, rather than evaluative, allowing us to meet each instructor wherever they are in their development as educators and then help them iteratively refine their teaching and student learning.

Approximately half of our work supports CMU's faculty and staff, with the other half supporting student and postdoctoral educators.
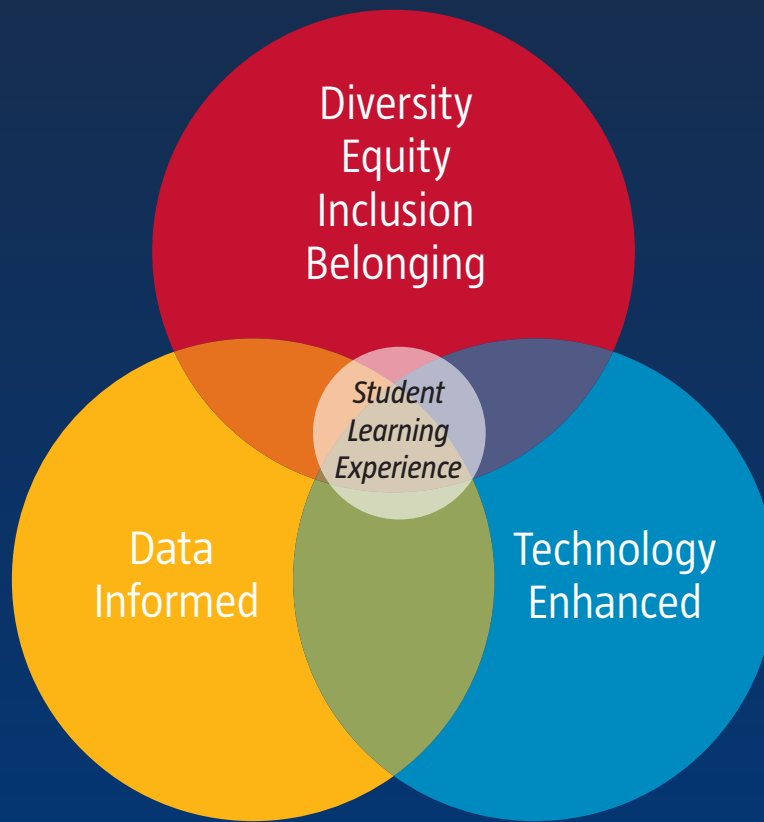
This annual report highlights the depth and breadth of our reach and contributions.

Annual Report
2022
23

Eberly Center Core Values

Diversity
Equity
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Belonging

Student
Learning
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Eberly Center programs and services embody our values
Selected highlights include...

Improving teaching, learning through data-informed practices

We help instructors from all seven Schools/ Colleges collect, analyze, and interpret rigorous quantitative and qualitative data on learning outcomes to iteratively refine teaching and learning, including:

183 instructors in 90 courses and/or **59 academic programs** and student support units.

104 Early Course Feedback services gathering anonymous student feedback via focus groups or surveys **for 75 instructors and 100 CMU courses.**

87 program-level assessment services for CMU academic and student support units.

Centering diversity, equity, inclusion, and belonging in our programs & services

At the university-, college-, and department-levels, we designed and facilitated 29 DEIB programs including:

13 programs for 259 faculty/staff instructors (who filled 311 seats).

16 programs for 444 graduate and postdoc students (who filled 541 seats).

Enhancing, innovating teaching & learning with technology

We consulted with **148 instructors** on technology-enhanced teaching/learning across multiple modalities: in-person, remote, and hybrid. Our services included:

3,322 technology help desk support services provided.

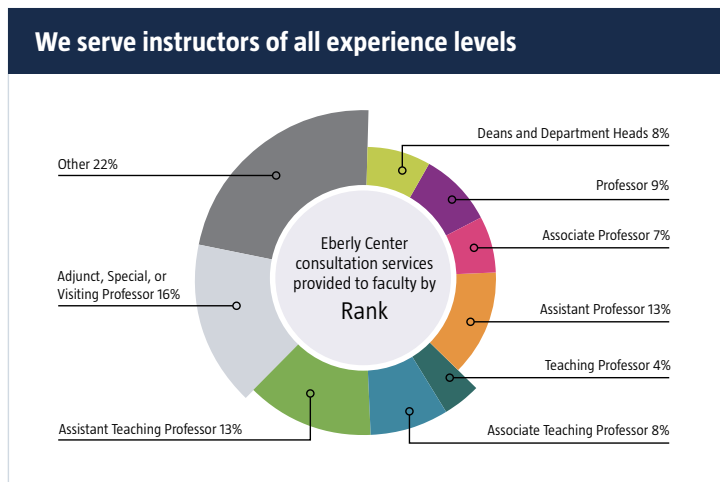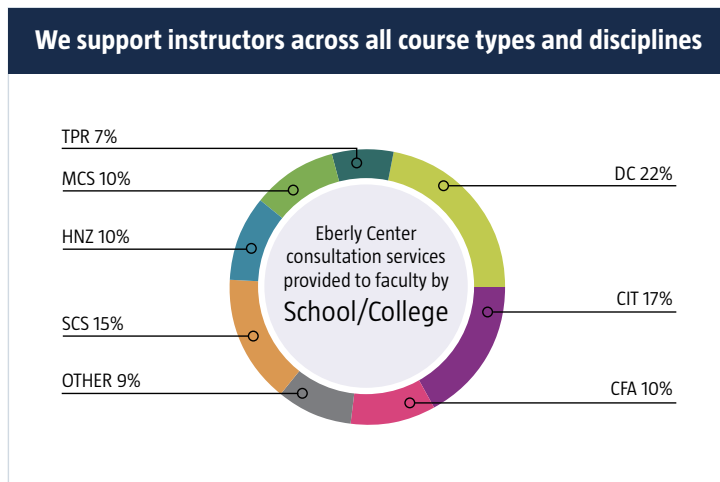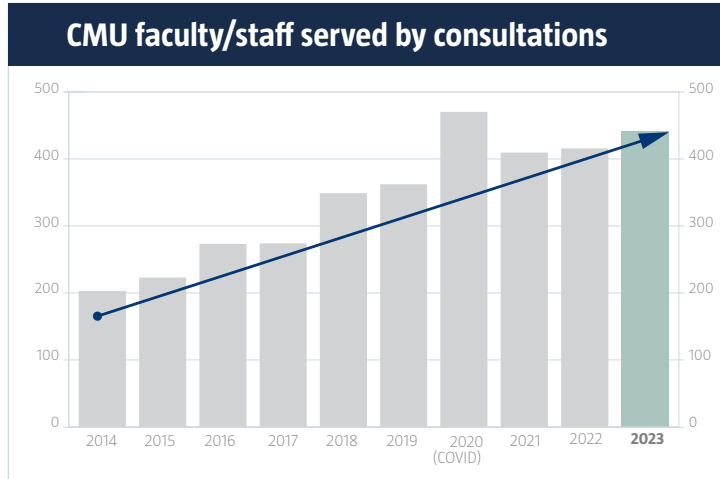**35 new TEL tools** developed, vetted, and/or supported for use in CMU courses.

4 new CMU Online courses designed, implemented, and assessed.

Eberly Center
Teaching Excellence & Educational Innovation

Demand for services continues to increase

Eberly Center supported 620 faculty/staff through consultations and group programs

CMU faculty/staff served by consultations

We support instructors across all course types and disciplines

Eberly Center consultation services provided to faculty by **School/College**

- TPR 7%
- MCS 10%
- HNZ 10%
- SCS 15%
- OTHER 9%
- DC 22%
- CIT 17%
- CFA 10%

We serve instructors of all experience levels

Eberly Center consultation services provided to faculty by **Rank**

- Other 22%
- Adjunct, Special, or Visiting Professor 16%
- Assistant Teaching Professor 13%
- Associate Teaching Professor 8%
- Teaching Professor 4%
- Assistant Professor 13%
- Associate Professor 7%
- Professor 9%
- Deans and Department Heads 8%

2023

2022

We provided **430 faculty/staff educators** (including 37 CMU-Qatar instructors) with consultations on evidence-based teaching strategies, technology-enhanced learning, and/or assessment of student outcomes, including:

- **435 CMU courses overall**
- **296 instructors** modifying pedagogical strategies and/or (re)designing courses

We also designed and facilitated professional development programs attended by **354 faculty and staff educators filling 491 seats**, including these signature offerings:

- 6th Annual CMU Teaching & Learning Summit **(58 faculty and staff)**
- Incoming Faculty Orientation **(53 faculty)**
- Spotlight on Diversity, Equity, Inclusion, and Belonging in Teaching **(42 faculty/staff)**
- CMU-Qatar Workshops on Teaching and Learning **(42 faculty)**
- Provost's Inclusive Teaching Fellows program **(23 faculty)**
- Innovative Models for Undergraduate Research program **(9 faculty)**
- Wimmer Faculty Fellows program **(4 faculty)**
- Teaching as Research Institute **(4 faculty)**

We served 691 graduate and undergraduate students and postdocs from 47 academic programs through our consultation services and programs on teaching and learning

- **508 Teaching Assistants and Instructors of Record** attended campus-wide Graduate and Undergraduate Student Instructor Orientations, preparing them for their CMU teaching responsibilities across 44 academic units.
- **177 students filled 354 seats** at our other university-wide seminars and workshops on evidence-based teaching and learning principles.
- **141 graduate students and postdocs received 246 individual consultations** on teaching.
- **29 graduate students and postdocs** attended the inaugural Mentoring Undergraduate Researchers Institute (co-hosted by the Office of Undergraduate Research and Scholar Development).

We supported 259 graduate students and postdocs in our *Future Faculty Program*, preparing them to teach effectively and inclusively as junior faculty members.
- **92 new participants** enrolled in the program.
- **22 participants** finished the program requirements.

We trained 7 Graduate Teaching Fellows (GTFs) in advanced, evidence-based teaching methods and teaching consultation techniques.

GTFs provided:
- **74 teaching consultation services** for **60 graduate students and postdocs**.

Graduate Teaching Fellows (GTFS)

Michael B. DeSalvo
Modern Languages

Luis Garcia
School of Design

Steven Moore
Human-Computer Interaction

Ashley E. Orr
Heinz

Alex Tabor
History

Elizabeth C. Walker
English

James Zhu
Mechanical Engineering

Our award-winning website provides a treasure trove of DIY resources on evidence-based teaching and learning

>2.5 million visitors annually to https://www.cmu.edu/teaching/

Highlights include:
- New resources regarding **generative AI in education**
- Guidance on **centering diversity, equity, and inclusion** in teaching

Spotlight on Innovative CMU Teaching

CMU instructors are innovators. Faculty and student instructors share their creative, transferable solutions to common teaching and learning challenges.
https://www.cmu.edu/teaching/spotlight/

Our TEL team significantly contributed to broader CMU initiatives

CMU Online
- **Designed 4 new online courses** in preparation for the Fall 2023 launch.
- Supported the design of and **launched the public-facing website** for CMU Online. *https://www.cmu.edu/online/*
- **Online TEL ecosystem: 5 new tools** were vetted, integrated, or developed to support the ecosystem for online learning.

Core Competencies Initiative (CCI):
- **CCI website:** Developed and delivered the Core Competencies website for CMU educators to use. *https://www.cmu.edu/corecompetencies/*
- **CCI Dashboard:** Began process of collecting data sources to analyze and display students' core competencies progress.

The Eberly Center contributes to the scholarship on teaching, learning, and educational development

How effective is asynchronous, online training for graduate and undergraduate student instructors?

Online training for student instructors

Chad Hershock, Michael C. Melville and Jacqueline Stimson
Eberly Center for Teaching Excellence and Educational Innovation, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA, and
Heather Dwyer
Center for the Enhancement of Learning and Teaching, Tufts University, Medford, Massachusetts, USA

Abstract

Purpose – The authors developed online learning modules to train graduate and undergraduate student instructors (GUSIs) in grading and delivering feedback in quantitative disciplines. The authors report results from multiple assessments conducted during recent training events at a mid-sized, research-intensive institution and discuss implications for educational development.

Design/methodology/approach – Using pre/post assessments, the authors measured participants' learning gains and skill development. In Study 1, the authors measured learning gains for 108 computer science GUSIs randomly assigned to complete the modules or not. Participants who completed the modules performed significantly better on the post-assessment relative to the control group across all seven module learning objectives aligned with GUSI responsibilities. In Study 2, we iterated on both assessments and modules, replicating Study 1 results for GUSIs from other quantitative disciplines. In Study 3, the authors compared learning gains from online modules to in-person training sessions, focusing on the authentic task of providing written feedback on student work.

Findings – Proficiency improved equally and significantly via both training modalities.

Originality/value – At research-intensive universities, GUSI training can be inconsistent and difficult to scale and rarely assessed via direct measures of outcomes. To the authors' knowledge, this is the first study to rigorously measure GUSI skill development via authentic assessment tasks such as grading student work and/or providing effective written feedback rather than simply testing knowledge. This study also addresses implications for designing and implementing effective GUSI training at scale.

Keywords Higher education, Learning, TA training, Feedback, Online learning, Assessment
Paper type Research paper

pod To Improve the **ACADEMY**
A Journal of Educational Development

Data-driven iterative refinements to educational development services: directly measuring the impacts of consultations on course and syllabus design

Chad Hershock, Laura Ochs Pottmeyer, Jessica Harrell, Sophie le Blanc, Marisella Rodriguez, Jacqueline Stimson, Katharine Phelps Walsh, and Emily Daniels Weiss

See also: ***Teaching as Research*** faculty projects and publications www.cmu.edu/teaching/teaching-as-research/

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A Journal of Educational Development

How search committees assess teaching: Lessons for CTLs

Katharine Phelps Walsh, Laura Ochs Pottmeyer, Deborah Meizlish, and Chad Hershock

Abstract

This study updates and expands upon past work on how tenure-track hiring committees evaluate teaching effectiveness to provide centers for teaching and learning (CTLs) current data as they support graduate students and postdocs navigating the academic hiring process. In this study, 166 hiring committee chairs from nine academic disciplines and a variety of institution types (e.g., Baccalaureate, Master's, and Doctoral) responded to survey questions addressing how they evaluate teaching effectiveness for tenure-track positions. Results indicate that hiring chairs across institution types and disciplines value a candidate's teaching effectiveness. Hir-

Thin-Sliced Embedded Direct Assessment (T-SEDA): Measuring Impacts of Development Workshops on Participants' Learning Gains

Chad Hershock, Jacqueline Stimson, Laura Ochs Pottmeyer, Michael C. Melville, Jessica Harrell, Emily Daniels Weiss, Marisella Rodriguez, Sophie le Blanc, & Alexis Adams

How can educational developers best formatively assess impacts of their services? Standard practices tend to rely on indirect measures, such as counts of participants and feedback surveys. This paper responds to recent calls for more robust approaches directly measuring learning outcomes. We describe how to implement a new, transferable, evidence-based approach for directly measuring instructors' learning gains within and across educational development workshops: the Thin-Slice Embedded Direct Assess-

Cultivating and Sustaining a Faculty Culture of Data-Informed Teaching: How Centers for Teaching and Learning Can Help

Marsha Lovett, Chad Hershock, and Judy Brooks
Carnegie Mellon University

Faculty in higher education are innovators – not only in their scholarly work, but also in their teaching. Many faculty try something new in their teaching over time, and others engage in substantial course transformations. Often, these changes are not informed by peer-reviewed research but rather are driven by intuition. They tend to be evaluated via instructor or student perceptions, rather than direct measurements of learning outcomes. This is not surprising, given faculty have limited time and resources to systematically study and improve their teaching based on data. And yet, there is such potential to enhance student outcomes if only universities could *make data-informed approaches to education standard practice.*

Data-informed approaches to education take two forms, both of which are consistent with the learning science approaches highlighted in this book. The first approach leverages extant data and results from the published literature. An instructor following this approach might read the overwhelming evidence that students learn better with active learning compared to lectures (Freeman et al., 2014), and then

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Special Mention: The 2nd edition of How Learning Works (Lovett, et al) released in print
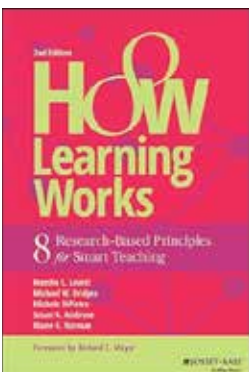
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How Learning Works: Eight Research-Based Principles for Smart Teaching, 2nd Edition

Lovett, Marsha C.; Bridges, Michael W.; DiPietro, Michele; Ambrose, Susan A.; Norman, Marie K.
Jossey-Bass, An Imprint of Wiley

As educators in the ever-evolving landscape of higher education, we are continuously challenged to keep our courses effective, engaging, relevant, and inclusive. The updated and expanded second edition of "How Learning Works" can help! It incorporates the latest research, provides a wider range of strategies, and adds a new principle to your toolkit. Readers will find eight essential learning principles that distill the overwhelming research literature into: (1) Real-world teaching and learning scenarios; (2) Examples that reflect a diverse set of teaching environments and learner populations; and (3) 150 practical strategies you can apply to your teaching context. With these practical, broadly applicable insights, you can: (1) Understand why your successful

Eberly Center Team

Leadership Team

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The Eberly Center reports to

Marsha Lovett, PhD
Vice Provost for
Teaching & Learning
Innovation

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