1.1 Support for Teachers and Learners

Major Issue: The growing presence of technology on campus and in the everyday lives of faculty and students presents new challenges and possibilities for providing support for teaching and learning. As the campus determines how best to move forward, a number of concerns should be considered, such as the need for: high-quality, easy-to-use tools that meet demonstrated teaching and learning needs; support for technology use that emphasizes teaching and learning; scalable and flexible support models that take into consideration needs that are different by discipline or unit and that may change over time; a better understanding of and ability to meet the support needs of students.

A. Background/Rationale

CU-Boulder faculty and students increasingly rely on technology tools and spaces for effective teaching and learning associated with face-to-face, online, and hybrid courses. In addition, students rely on those same tools and spaces for learning outside of their traditional academic programs. Effective use of technology relies on support models that address these issues while respecting disciplinary differences, and that are broadly and easily accessible to all faculty and students. Currently, that support is provided by a mix of central and decentralized units and efforts. Even as pockets of excellent support exist, the campus needs to make sure that technology support is consistently available across all units. In addition, that support must be flexible enough to meet needs that differ by discipline or with changes in pedagogical methods, understanding about learning, or technologies.

B. Accomplishments to Date

Various stakeholders across campus invest in structures to support the use of technology in teaching and learning. Investments in this support are made both centrally and locally. Examples of technology support structures with a teaching and learning focus include ASSETT, ALTEC, and iSTEM in Arts & Sciences, the Leeds School technology unit, Disability Services, and the Academic Technology unit of ITS. The campus also has a number of resources that specialize in supporting teaching and learning generally. Examples of these units include the University Libraries (which already has a significant technology focus), FTEP (Faculty Teaching Excellence Program), and GTP (Graduate Teacher Program). Overall, however, there is a lack of communication between and knowledge sharing among the many units providing this support. To ensure effective and sustainable support for teaching and learning with technology, more work needs to be done to inventory the support and services provided by and the service models in use within each of these units, and to increase communication and coordination among them.

Action Plan

A. Explicit Assumptions

The growing presence of technology on campus and in the everyday lives of faculty and students presents new challenges and possibilities for providing support for teaching &
learning. Moving forward, a number of concerns should be considered:

1. Effective support assumes the presence of stable, high-quality, functional, and easy-to-use technology-related tools and spaces (some of the campus’s most critical tools do not meet this basic standard).
2. Effective support for technology in teaching and learning emphasizes support for teaching and learning over support for technology.
3. Effective support is aware of the changing needs of teachers and learners, of the ways those needs vary within different units, and adapts to those changes.
4. Students as learners have different needs than faculty. The campus must understand and meet the support needs of students.
5. The campus should leverage the expertise and knowledge of existing investments in locally- and centrally-provided support for teaching and learning with technology in ways that it does not do now.

Strategic Principles. These should guide campus decision-making in this area. They map roughly to the concerns above and will be used to structure the rest of this chapter.

1. **Usability is fundamental.** Any basic, centrally provided technology must work well, must be accessible, easy to use, and must meet pedagogical needs as defined by the teachers and learners themselves. The current version of CULearn (Blackboard’s CE 8), for example, does not work well, is not easy to use, and fails to meet many pedagogical needs. Support that exists to compensate for low usability of tools is an inefficient use of resources.

2. **Good support is driven by faculty and student’s academic needs.** Support needs vary across different disciplines and different sets of users. Decisions for how to structure and prioritize support should emerge from these needs. Support models, therefore, must be flexible and adaptable. Success should be measured primarily by meeting those needs, rather than by technology-centric factors such as adoption rates or help-center call volume.

3. **Good support scaffolds user learning.** Support models should scaffold users so that, over time, they no longer need support for a particular practice or tool. Incremental and accumulative gains are valuable and help support remain flexible and adaptable.

4. **Good support extends beyond the classroom.** The campus must support teaching and learning that takes place outside of the classroom. Traditional support emphasizes the course or classroom, which biases support toward faculty needs. Supporting students may often require something completely different. Supporting student needs is critical.

5. **Partnering is critical** Many units on campus currently provide some level of support for teaching and learning. Encouraging connections across these units can help them leverage existing resources, increasing efficiency and scalability without significant additional outlay. Partnerships can encourage pilots, local experimentation, and transdisciplinary projects. Also, through these conversations, central IT can make more informed decisions about what support gaps exist across campus and how to fill them (rather than duplicate existing resources).

**B. Specific Recommendations**

1. **Ensure usability of tools, systems, and spaces**
   - Adopt a set of usability guidelines centered on teaching and learning, to be applied to
any technology tool currently used or being considered for campus-wide adoption. Use the results to inform decisions about priorities for tool upgrades or replacements. Make the guidelines and resulting assessments available to the campus community.

- Replace CU Learn and improve the campus clickers/SRS tool. See chapters 1.2 and 1.3 for specific recommendations about spaces and tools.

2. **Align support with local and changing needs**
   - Many local programs successfully support teaching & learning with technology. Support these local successes, strengthen them by involving them in campus IT decision-making and policy discussions. Consider investing central resources to grow local programs.
   - Fund regular needs assessments of teaching and learning needs, conducted by support staff themselves. Use methods that provide these staff with first-hand knowledge of local needs and practices, i.e., focus groups, observations, and interviews rather than surveys. Share the results.
   - Fund regular evaluation and assessment of support services and resources, to better inform decisions about priorities and directions. Support change when data call for it.
   - Be sure that campus IT policies and support structures allow (and even encourage) risk-taking and experimentation, e.g., support for online learning outside of CU Learn, using wikis or social media. Consider reviving past or expanding present resources such as the Educational Technology House (formerly in Eaton Humanities), Academic Media Services (currently in the ATLAS Building) or grant programs (e.g., as formerly in ATLAS, and as currently in President’s Teaching and Learning Collaborative, ASSETT and ALTEC) that encourage experimentation and adoption of educational technologies.
   - Invest in improved online learning resources and training opportunities for faculty, students, and staff.

3. **Provide better support for students**
   - Create new or redesign existing support models to address the specific needs of students, recognizing this may require more cost outlay to establish new support offerings (such as hardware and software support).
   - Consider student needs outside of the classroom. Re-examine any central support structure that artificially separates support (i.e., that supports only faculty or only students).
   - Invest in campus learning spaces that are student centered, such as Norlin Learning Commons, Center for Community, or the UMC.
   - Invest in tools that are student centered, such as eportfolios.
   - Engage student government in planning, decision-making, and implementation of new support models. Pursue recommendations to create a Student Technology Advisory Board.

4. **Facilitate effective support across campus through partnering**
   - Create a list of who provides teaching and learning support on campus, share the list and update it regularly. Provide mechanisms for programs to learn more about each other, and for them to partner with one another. Include programs with primary missions for supporting teaching and learning (with or without technology), such as the Libraries, FTEP, GTP, and STEM Learning Assistants program (School of Education).
   - Create a grant or incentive program to support or facilitate peer-to-peer mentoring or expertise-sharing in this area.
• Involve faculty and students more directly and regularly in decision making about how to provide support. This may mean participating on advisory committees, or holding formal managerial appointments in support structures.

• Re-examine technology support models currently funded by course and instructional fees. Look for potential to restructure the support models. Current fees may have been implemented when the technology teaching & learning environment was very different. Encourage low-cost models, such as peer learning (students or faculty learning from each other).

C. Long & Short Term Objectives/Timeline

Short Term (6-12 months). Change the conversation. Demonstrate a commitment to changing existing practices as needed and building an open conversation.

1. **Ensure usability of centrally provided tools, systems, and spaces**
   - Implement critical tool replacements (CULearn) and improvements (clickers/SRS)
   - Establish structures to regularly gather and disseminate data on usability.
   - Ensure accessibility (508 compliance) of new and existing tools through work with Disability Services and the Procurement Service Center. Publicize requirements and practices that lead to equal access to information and technology for students and faculty. Improve faculty training in this area.

2. **Align central support with local and changing needs.**
   - Implement a variety of evaluation and assessment activities into central IT so that they are in a better position to understand needs (perhaps with ASSETT as a model).
   - Revive initiatives that put central staff, including those who support teaching and learning and those with more operational responsibilities for technology implementations, in direct conversation with faculty, academic staff, and students (and them with each other). A possible starting place is the FEET (Faculty Evaluating Emerging Technologies) idea, expanded to include academic staff and students.
   - Invest in pilot studies of new technologies, carried out by either central or local programs.
   - Research effective practices for supporting teaching and learning with technology, including practices of peer institutions.

3. **Provide better support for students**
   - Conduct a campus wide needs assessment and gap analysis with students to identify technology needs for learning. Share the results.
   - Involve students in governance of information technology and decisions and directions resulting from that assessment and analysis.
   - Evaluate centrally provided student training; change or augment with new tools and methods based on conclusions of evaluation.

4. **Facilitate effective support across campus through partnering**
   - Begin inventory of campus units providing support, including missions, activities, expertise, availability of resources, and areas of support. Share the results.
   - Convene support units in knowledge-sharing meetings, research and project presentations, and online communities. Determine effective methods for
communication and collaboration between these units. Consider ways to leverage joint resources to gain purchasing efficiencies, e.g., for software licenses.

- Involve a broad representation of campus stakeholders to oversee a cost study that investigates various means for funding campus-wide support.

**Long Term (1-3 years).** Create a support environment such that by 2015, CU-Boulder is recognized by students, faculty, and peer institutions as an exemplar for supporting teaching and learning with technology.

1. **For every central adoption of a new technology service or application on campus, invest sufficient funds to ensure adequate user support.** Determine on a case-by-case basis whether the investment should be in central programs, local programs, or both.

2. **Formally integrate usability into processes for adoption/upgrade of any centrally provided tool or space.** Form and disseminate usability guidelines for technology tools, systems, and spaces.

3. **Invest in teaching and learning support resources at a level equal to (or greater than) investments in spaces and tools.** The campus is understaffed with regard to personnel to support teaching and learning with technology. It is imperative that any plans for new tools and spaces include sufficient *additional* resources for *additional* teaching and learning support staff. And as more teaching and learning technologies are "lightweight" or "personal," effective support requires an increase in staff, *even when the campus is not adopting a new central technology.*

4. **Create and nurture a collaborative support environment on campus.** Share results of assessment and evaluation efforts. Implement data-driven change. Ensure transparency in decisions about and funding of support for teaching and learning with technology. Eliminate artificial divisions that are based on resources, rather than on needs.

5. **Change how central support is provided by centering on identified cross-unit needs rather than separating support by discrete organizational units.** Match support to needs. The model that creates silos of support for different units is inefficient and does not leverage campus-wide opportunities. Avoid significant disparities among units with regard to support for teaching and learning. Avoid significant disparities between students and faculty support. Adopt a structure that is flexible and adaptable, so that it can change as needs change. Determining the specific structure to adopt should involve a discussion among campus stakeholders.

**D. Possible Risk**

No IT security risk is identified and/or associate with these recommendations.

**E. Resource Allocation**

1. Many of the short-term recommendations require changing the priorities of existing IT staff as well as faculty, staff and student participation. Faculty will participate as part of their service assignment. Staff may need to have workloads reassigned. Student leadership can be engaged; modest incentives generally also increase participation rate.
2. Several items are low cost ($10,000 or less), assuming existing staff may be reassigned and student research assistants are employed.

3. Conducting assessments will be worthwhile only if the campus can respond adequately to the identified needs. An unrestricted fund would allow the campus to provide small grants or awards to respond quickly and flexibly to meet emerging needs. The use of these funds could be overseen (and perhaps awarded) by an advisory committee, furthering the involvement of campus stakeholders. Earlier intervention generally results in lower longer-term cost. The resources available should be on par with other campus-wide proposals, such as for CRCW awards or Outreach grants.

4. Investing in additional staff is the most critical component of providing effective teaching and learning support. It is also the most cost intensive, ranging from $8,000-10,000/year for undergraduate support to $80,000-100,000/year for professional support. The campus might call for proposals from units on campus, leveraging central funding with local funding. This would allow individual units to determine what kind of support they need, which may range from lower-cost options of student employees up to professionals. As identified in objective 7, any centrally provided resource must also fund adequate support.

F. Responsible Parties

1. Campus-wide Information Technology Advisory Committees (formed as a result of this overall strategic plan) to monitor overall implementation and ensure that progress is made toward achieving general goals.
2. Several items require the partnership and collaboration of the various units on campus that provide teaching and learning support. CIO and/or Chancellor should solicit broad initial participation.
3. The CIO and the Provost should solicit participation for a committee to review proposals for item 2, third bullet.

G. Evaluation

Evaluation of this plan is straightforward. Success can be measured by the change in perceptions and attitudes of (1) faculty, staff, and students, (2) staff of programs across campus that support teaching and learning. The recommendations of this plan aim to create an environment in which support can achieve excellence. As the technology environment changes over the next 5 years, other specific actions may emerge as equally effective. This evaluation mechanism allows the campus to remain flexible with regard to specific decisions that may be needed in the future.

A campus-wide committee with minority representation from technology-centered support units (whether central and local) should be formed. Using this plan as its guide, this committee should identify measurable indicators for assessing achieved success over time. The committee should determine a methodology for gathering and analyzing data on an annual or bi-annual basis. The committee should report the results of the study publicly to the campus. (An example of an existing committee with a similar charge is the Chancellor’s Committee on Women.)
Additional Information

Table 1: Partial list of high-level units providing support for teaching and learning with technology

<table>
<thead>
<tr>
<th>Name of Unit</th>
<th>Division</th>
<th>Tech Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Technology</td>
<td>ITS</td>
<td>High</td>
</tr>
<tr>
<td>ALTEC (Anderson Language Technology Center)</td>
<td>Arts &amp; Sciences</td>
<td>High</td>
</tr>
<tr>
<td>ASSETT (A&amp;S Support of Education Through Technology)</td>
<td>Arts &amp; Sciences</td>
<td>High</td>
</tr>
<tr>
<td>ATLAS</td>
<td>Institute</td>
<td>High</td>
</tr>
<tr>
<td>Continuing Education and Professional Studies</td>
<td>Continuing Education</td>
<td>Medium</td>
</tr>
<tr>
<td>Disability Services</td>
<td>Student Affairs</td>
<td>Medium</td>
</tr>
<tr>
<td>FTEP (Faculty Teaching Excellence Program)</td>
<td>Faculty Affairs</td>
<td>Medium</td>
</tr>
<tr>
<td>GTP (Graduate Teacher Program)</td>
<td>Graduate School</td>
<td>Medium</td>
</tr>
<tr>
<td>iSTEM</td>
<td>Transdisciplinary</td>
<td>High</td>
</tr>
<tr>
<td>University Libraries</td>
<td>Libraries</td>
<td>Medium-High</td>
</tr>
</tbody>
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Table 2: Schools, Colleges, and Departments with formal Support Staff for technology

<table>
<thead>
<tr>
<th>Name of Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Sciences</td>
</tr>
<tr>
<td>ASSETT at college level</td>
</tr>
<tr>
<td>Dean's office, for advisors</td>
</tr>
<tr>
<td>ALTEC for language departments</td>
</tr>
<tr>
<td>Chemistry</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Ecological and Evolutionary Biology</td>
</tr>
<tr>
<td>Film Studies</td>
</tr>
<tr>
<td>Geology</td>
</tr>
<tr>
<td>Molecular, Cellular, and Developmental Biology</td>
</tr>
<tr>
<td>Physics</td>
</tr>
<tr>
<td>Psychology</td>
</tr>
<tr>
<td>Architecture and Planning</td>
</tr>
<tr>
<td>Business</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Engineering (departmental level, e.g., Computer Science)</td>
</tr>
<tr>
<td>Journalism</td>
</tr>
<tr>
<td>Law</td>
</tr>
<tr>
<td>Music</td>
</tr>
</tbody>
</table>

List of Accessibility and 508 Compliance Resources
Campus standards on accessibility: http://www.colorado.edu/webcom/access/
Disability Services Resources:
http://www.colorado.edu/disabilityservices/facultyinfo.html or
http://www.colorado.edu/disabilityservices/handbook/handbook1.html