

## LEARNING DIMENSION REPORT

### Section 1. Theoretical Framing

The learning committee was charged with investigating the extent to which CU Boulder delivers intentional curricular and co-curricular learning experiences in the first year that engage students and meet established learning goals. We investigated the current situation at CU Boulder and we present several recommendations for improvement. We use *institutional theory* (Scott, 2014) as a context within which to identify high leverage areas for change at CU.

According to institutional theory, *regulative*, *normative*, and *cognitive* aspects of institutions determine what is enacted and valued by participants at all levels. *Regulative* aspects are in the form of formal policies and work rules. *Normative* elements refer to participant habits and working norms. *Cognitive* aspects refer to beliefs and values that are often both reconfirmed and reproduced through normative and regulative aspects of the system. These three systemic elements are mutually-reinforcing, although they can also contradict, and sometime conflict with one another and still co-exist.

Institutional change efforts often appeal to one or more of the regulative, normative, and cognitive elements of the system (Palthe, 2014). Table 1 shows how Palthe (2014) depicts the various aspects of change. For example, behavioral reasoning ranges from “have to,” “ought to,” and “want to.” In order to bring about change at CU Boulder that allows for diverse experiences that meet stable goals for first-year students, we must appeal to all of these components in a way that promotes faculty and departmental agency, yet holds to a set of standards that are continually assessed by the administration.

**Table 1.** Regulative, Normative, and Cognitive Elements Associated with Organizational Change

	<i>Regulative</i>	<i>Normative</i>	<i>Cognitive</i>
<b>Legitimacy</b>	Legal systems	Moral and ethical systems	Cultural systems
<b>Central Rudiments</b>	Policies and rules	Work roles, habits and norms	Values, beliefs and assumptions
<b>System Change Drivers</b>	Legal obligation	Moral obligation	Change values are internalized
<b>System Change Sustainers</b>	Fear and coercion	Duty and responsibility	Social identity and personal desire
<b>Behavioral Reasoning</b>	Have to	Ought to	Want to

\*From Palthe, 2014.

As we seek to improve learning conditions for first-year students, we seek to understand the current situation and look for missed opportunities within the system in order to build structures that can alleviate and/or resolve these tensions. We have two broad findings having to do with accountability and support. First, there is no regulative body on campus that holds courses/departments/faculty accountable for student outcomes. While systems such as ARPAC and Tenure and Promotion are in place for evaluating departments and faculty, these entities do not explicitly consider undergraduate student outcomes. Second, there are few centralized

systems to support departmental, faculty, and staff efforts to improve students' educational success or to evaluate the efficacy of such efforts. A related finding is that while there are pockets of excellence regarding student support, there are many redundancies and few mechanisms for comparing the quality of these disparate efforts. We find a general lack of communication between the various programs that support students and the faculty/departments who teach courses that often determine students' fate.

## Section 2. Process summary

The Learning Committee met biweekly throughout most of the Fall 2017 semester. During those meetings the group developed a model of learning based on our collective experience as faculty, staff, and students at CU Boulder. In addition, both during and outside the meetings we explored the Evidence Library and Inventory in FoETech and conducted our own information gathering work to better understand the current state of the First Year Experience on campus. The group continued meeting during Winter Break and into February 2018 to evaluate evidence and consider theoretical frameworks for our report.

## Section 2. List of committee members and their affiliations

<u>Name</u>	<u>Title</u>	<u>Committee Role</u>
Will Abrams	Student	Member
Rebecca Ciancanelli	STEM Coordinator, SASC	Member
Alex Fosdick	Instructor, ECEE, Engineering	Member
Akram Imam	Student	Member
Denee Janda	Campus Advising Specialist, University Exploration and Advising Center	Co-Chair
Tracy Jennings	Senior Instructor, Leeds School of Business	Member
Mike Klymkowsky	Professor, Molecular, Cellular, Developmental Biology	Member
Tim Kuhn	Professor and Associate Chair for Undergraduate Studies, Communication	Member
Valerie Otero	Professor, School of Education	Co-Chair
Amy Palmer	Associate Professor, Chemistry and Biochemistry	Member
Kate Semsar	Instructor, MASP	Member

## Section 4. Narrative of committee opinions on each question on the FoE website

### PI 3.1 Learning Goals.

- To what degree has the campus established common learning goals specifically for the first year?
- To what degree has the campus measured outcomes for common learning goals for all first-year students?
- Discussion: Forty-five percent of FoE Student Survey respondents reported that they understand the learning goals on campus to a high degree. However, we cannot find campus-wide first year (applied) learning goals nor measures of outcomes. There is evidence of goals existing within courses and programs, and there appear to be pockets of knowledge about learning goals but not on a campus-wide scale. The university seems to operate on a course-by-course and departmental basis. While Student Survey

respondents are aware of learning goals, we cannot help but wonder whether they were thinking about textbook chapters or course requirements.

### PI 3.2 Engaging Students.

- To what degree does the institution document instructional methods used in each course and evaluate their effectiveness in engaging students in learning?
- Discussion: Student engagement seems to be at least somewhat dependent on class size. In larger classes, clicker questions are often implemented to help keep the students engaged and to provide instant feedback to faculty regarding students' understanding of the topic. Some professors implement worksheet time in these larger lectures; this method is effective in engaging students and making them focus on the task on hand. In smaller classrooms, group discussions are used and more frequent professor-student interactions occur. However, similar to the status of campus-wide learning goals, we do not find evidence of campus-wide data on the instructional methods used in various courses nor their effectiveness.

### PI 3.3 Course Outcomes.

- To what degree does the institution document and evaluate student learning outcomes across all sections of each course?
- Discussion: The four courses we were evaluated are: ECON 2010, CHEM 1113, EBIO 1210 and WRTG 1150.
  - ECON 2010 leaves discretion to the instructor regarding content and runs one large section taught by a faculty member and many small sections taught by Graduate Part Time Instructors. The department tracks student grades and aims for an average class GPA of B- to C+. Occasionally, a faculty member will give the same midterm as in the past to track learning, and they do not see significant changes over time. In the large lecture section, it is common for the faculty member to reach out at midterms to all students below C- with recommendations for improving their study skills.
  - CHEM 1113 instructors agree on curriculum and co-write exams. They use a placement exam system (with online materials to prep students and a paper placement exam at the beginning of the semester with administrative drop-back to CHEM 1021). They have used clickers in lecture to engage students and have adapted recitation materials to keep current. They have recently offered optional skills workshops, and they provide practice exams on D2L and keep grades current. They use the same final across sections and track scores.
  - EBIO 1210 uses pre-post testing to estimate learning gains, controlled experiments regarding effective instructor practices, student surveys & focus groups regarding successes and barriers to the course, focus groups with TAs, practice exams to track student progress, and exam score tracking. They also send e-mails to students below C- at midsemester.
  - WRTG 1150 reviews FCQ data, requests and tracks DFW information for their course, assesses syllabi to ensure learning goals across all sections, and reviews reflective writing to evaluate student understanding. They may pilot a common final portfolio in the future. They also used the NSSE student survey to get feedback.

- While there is some departmental tracking and consideration of these four courses, there does not seem to be an institutional review, nor does there appear to be reviews of other high-enrollment or multi-section courses at CU.
- In addition, there is little evidence that where course learning goals do exist, exam questions directly reflect these goals; that is, whether exam grades reflect success in learning, as articulated in course goals.

#### PI 3.4 Courses with High D/Failure/Withdrawal/Incomplete (DFWI) Rates

- To what degree does the institution attempt to address the causes of high DFWI rates in the courses reported in Section H of the Current Practices Inventory (ECON 2010, CHEM 1113, EBIO 1210 and WRTG 1150)?
- Discussion: Overall, there seem to be pockets of knowledge throughout campus on how to detect early-warning signs and address them, and there appears to be some evidence of success. See above for the interventions in the high-enrollment courses we evaluated. In addition, the Business School and the College of Engineering have identified courses that reduce student persistence in their colleges. They have early warning methods and interventions. We have found that A&S is the college least likely to have such a program. The Student Academic Success Center also has identified courses that cause problems for students and they have early warning (6 week) assessments and interventions. Programs such as the LA program report decreases in DFW rates in courses that use LAs. It is important to note, however, that some departments with high DFW courses are not doing anything and it is not clear that anyone is paying attention.

#### PI 3.5 Placement

- To what degree does the campus intentionally place first-year students in appropriate courses to address deficiencies in academic preparation?
- To what degree does the campus intentionally place first-year students in appropriate courses to provide sufficient academic challenge for above-average students?
- Discussion: Placement exams and/or predictive analytics during New Student Welcome are used to guide student placement into several areas: math, chemistry, writing, and foreign languages. Some departments also use in-class assessments during the first weeks of the semester to further refine course placement, and students are either administratively switched to other classes or strongly encouraged to do so on their own (ie, CHEM, APPM, MATH). In terms of addressing deficiencies in academic preparation, there is some intention to place students effectively, but in some situations there is no pathway for students who place below a certain level (ie, no pathway to calculus if a student places below precalculus). And, other areas are not assessed at all (e.g. ECON, EBIO, Stats, PHYS). In order to appropriately challenge high-achieving students, some departments recruit high-achieving first-semester students to be LAs/CAs/TAs/IAs in their second semester. There are also a variety of honors and research opportunities for above-average students (e.g. SUEP and college honors programs).

#### PI 3.6 Special Learning Opportunities

- To what degree does the institution measure first-year students' learning outcomes for each of the following?
  - First-Year Seminar
  - Learning communities (can include living-learning communities)
  - Leadership programs/courses

- Service learning **[N/A]**
- Student affairs functions/initiatives other than residence life
- Residence Life (if campus houses 33% or more of first-year students)
- Out-of-class activities linked to academic courses or programs
- Discussion: While there does not appear to be a campus-wide approach to learning goals for first-year students, many departments across campus have been developing learning outcomes. Each office within the Division of Student Affairs has been developing learning outcomes for students. The Leadership Minor, Public Achievement (through CU Engage), and the CommRAP assess their students' engagement, although few first-year students are involved enough in the programs for assessment to be indicative first-year engagement. The CU Dialogues Program interacts with first-year students in RAPs and courses, though it is not clear how many first-year students are impacted nor how their learning is assessed. The First-year Seminars assess their learning outcomes via a midterm self-report survey.

Section 5. Sources of evidence. Keep to a brief list. If you wish to include the data/evidence itself in your report, put it in an appendix.

- FoE Faculty/Staff Survey
- FoE Student Survey
- Learning Committee experiences (faculty, staff, and student perspectives)
- FoE Evidence Library
- FoE Inventory

Section 6. Committee recommendations.

**Recommendation 1: The University Administration make a public and explicit commitment to using various measures of undergraduate student success** (including but not limited to retention in the major, time to degree, and learning outcomes) as metrics in the evaluation, support, or sanction of all campus Departments and Units.

1. Departments should be required to submit yearly reports on their undergraduate education programs, including data on students' educational outcomes in all courses required for the major and descriptions of all efforts underway to help ensure the success of their students.
2. Such reports should include evidence that course and curricular learning goals are being met, for example through a comparative analysis of course learning goals and exam questions used to evaluate learning (conducted with the assistance of the CTLO - see Recommendation 3).
3. Such reports could also include proposals for staff dedicated to a department's educational mission and other efforts to improve students' academic success (course development and/or redesign).

**Recommendation 2: The Administration review the [Learning Goals for all Boulder Baccalaureate Graduates](#) (2011) to determine which goals can be addressed in the first year.** Here are our recommendations for first year goals:

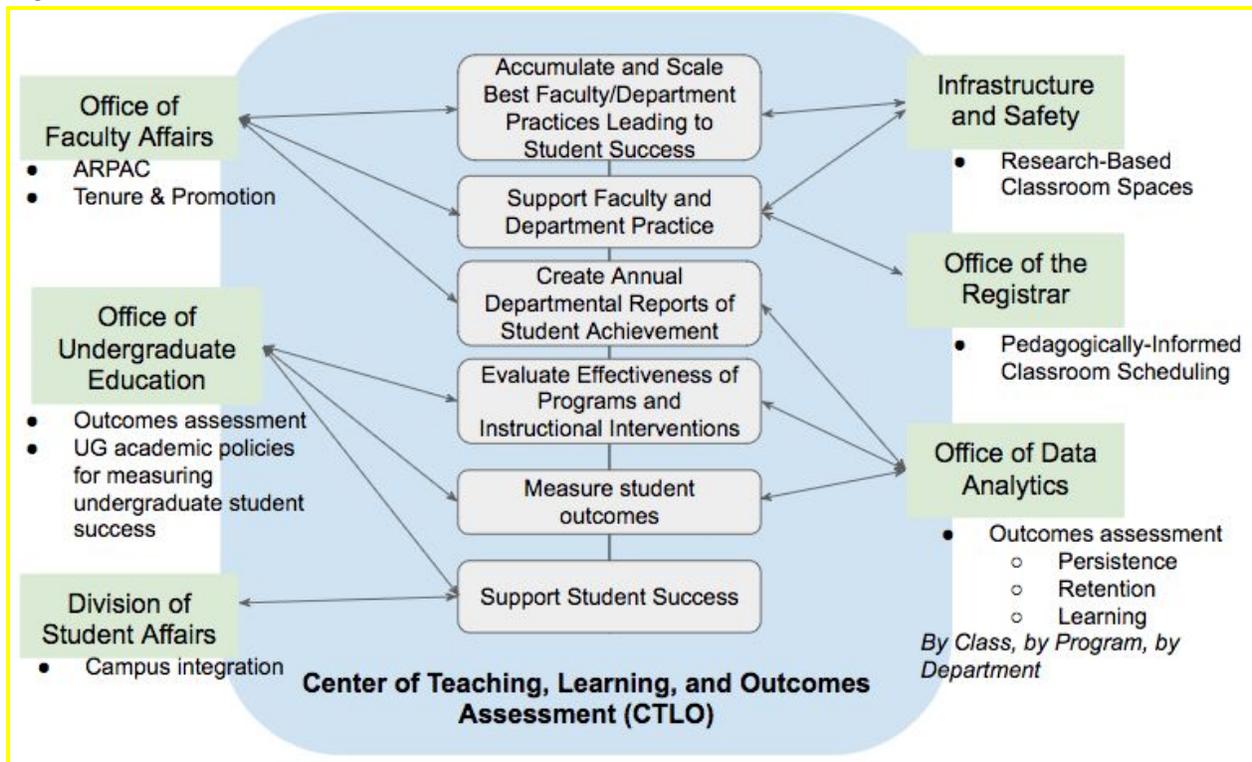
1. Engage in communication in written and oral forms for various audiences

2. Locate, evaluate and apply relevant evidence and technologies to solve problems in their disciplinary areas of study
3. Work collaboratively and individually
4. Learn how to learn, to develop curiosity, and explore paths both personally and professionally to see what works for them personally

**Recommendation 3: The Campus establish a Center for Teaching, Learning, and Outcomes Assessment (CTLO)** to broker the relationships between the Division of Student Affairs, the Office of Faculty Affairs, the Office of Data Analytics, Infrastructure and Sustainability, and the Office of Undergraduate Education (see fig. 1).

1. The CTLO would not be a regulative body. Instead, it would support regulative bodies by creating accountability mechanisms and data-based arguments to inform fiduciary decisions that directly (or indirectly) impact students. Simultaneously, it would provide normative and cognitive support for departments and faculty through establishing benchmarks and scaling best practices for improving student outcomes.

Figure 1:



2. The functions of the CTLO could have the following mission (referring back to institutional theory):
  - a. Regulative: To support the Administration by providing annual Departmental Reports of Student Achievement. The CTLO would work with the Office of Data Analytics to create data-based summaries of student outcomes for each

department and would also work with departments to document department/faculty/course-specific efforts to improve instruction, learning, retention, and persistence to graduation. These annual reports could later be used by the department when they undergo ARPAC review to make data-centric arguments. The reports could also assist administrators in making decisions regarding resource allocation, both to departments and also toward scaling high-leverage efforts and programs that are found to be exceptional.

- b. Normative: To foster an “ought to” approach to using best practices, the CTLO would accumulate and scale practices for enhancing student success. While working closely with departments to understand and measure their efforts to improve student success, the CTLO will also catalog high-impact efforts, as well as those that are ineffective. Upon evaluating departmental outcomes, the CTLO can recommend practices that align well with departmental cultures and needed outcome improvements. The CTLO might also serve the function of establishing templates for tenure and promotion packages that highlight faculty members’ efforts to improve student outcomes, which would help members of the Vice Chancellor’s Advisory Committee to use outcome measures to evaluate the holistic progress candidates.
  - c. Cognitive: To support faculty and departments to create, maintain, and measure conditions leading to student success. Departmental Reports of Student Achievement can be used as a formative evaluation measure for departments. CTLO faculty fellows can work with department chairs, make presentations to departments, and work with departments to set benchmarks and design studies to measure the success of focused efforts. In departmental presentations, the CTLO can make data-based recommendations for practices that have been proven successful in other units with similar contexts and conditions.
2. The CTLO should have a direct line to the Provost and should work directly with Student Affairs and Faculty Affairs to foster collaboration
    - a. 52% of Faculty/Staff survey respondents indicated Academic and Student Affairs collaborated slightly or not at all, and an additional 31% suggested only moderate collaboration. In addition, 49% of respondents believe Student Affairs and faculty partnerships are slightly or not at all encouraged by senior institution leaders.
  2. The CTLO should draft and monitor campus/college learning goals -- all courses at CU should have specific learning goals and each course should map to one or more campus-wide learning outcomes.
    - a. The CTLO could also, upon request, analyze whether course learning goals are reflected in (consistent with) the exam questions used.
  3. The CTLO should offer Departments various professional development and assessment services.
    - a. 79% of CU faculty do not use or rarely use assessment of pre-enrollment academic skills, but the CTLO could facilitate the use of assessment to guide faculty work with first-year students.

4. The CTLO should use expertise from people on campus and gather information from programs that have evidence of positive outcomes such as learning, retention, persistence, and time to degree.
5. Promote student persistence and engagement initiatives, such as
  - a. Identify students who are at risk of falling through the cracks and/or classes that are pain points, and explore early interventions
  - b. Ensure placement in appropriate courses
  - c. Ensure that students are engaging in their college education (both in classes and in the experience more broadly)
  - d. A campus-wide Early Alert system would allow faculty to identify students at risk of earning Ds/Fs in classes. Academic advisors and other staff could outreach to students to provide support and/or assist them in dropping the class. This strategy might increase the Ws in classes, but would hopefully decrease the Ds/Fs, by turning some into higher grades and some into Ws.

**Recommendation 4: The campus establishes unit that focuses specifically on the First-Year Experience.** The office could:

1. Coordinate campus-wide FY Initiatives and serve as a clearinghouse for all things 'first-year'
2. Liaise with College, Programs, Departments, and Offices that already offer FY programming
3. Work with the Administration and the CLTO to develop learning goals for the first year
4. Assist students in identifying academic pathways within majors that are aligned with their interests
5. Provide students with information about metacognition so that they can capitalize on their own ability to learn

Section 7. Appendices/References (if any). Specific data/evidence pertaining to your committee's discussions.

Palthe, J. (2014). Regulative, Normative, and Cognitive Elements of Organizations: Implications for Managing Change. *Management and Organizational Studies*, 1, 59-66.

Scott, W. R. (2014). *Institutions and organizations: Ideas, interests, and identities*. Sage Publications.

Working Model of Learning?