

Appendix S: Learn-by-Doing Department Chair/Head Survey Results

WASC Learn-by-Doing Department Chair Survey

The following survey has been created by the WASC Learn-By-Doing Working Group to gather an inventory of current learning practices across programs at Cal Poly. Through your responses, we hope to determine how your department incorporates learn-by-doing in its curriculum and teaching practices.

1. Name of Department Chair (or person completing this survey) *

2. Title if not Chair

3. Program(s) within Department: *

4. DEFINITION FOR DEPARTMENT

Please provide your definition for **Learn-by-Doing** here as it relates to your **department**: *

5. DEFINITION FOR CAL POLY

Please provide your definition for **Learn-by-Doing** here as it relates to student learning at **Cal Poly**, in general, if different from that above:

6. TYPE and IMPORTANCE OF ACTIVITIES

For each activity listed below, please indicate in Column A whether this activity is in your program to help students learn by doing. For the activities you checked in Column A, please answer the following questions:

1. At what course level does the activity occur, if applicable? (e.g. 100, 200, etc.)
2. Is there an additional cost for the student to participate in this activity?
3. How important is this activity to your students' learning?
4. How often is this activity offered in your program?
5. Does this activity promote interaction with individuals from diverse groups or understanding of multicultural issues?

*

	Occurs in program?	Course Level(s)	Cost to Student?		Importance to Students' learning	Frequency Offered	Diversity Impact		
	(check all that apply)		Yes	No					
Clubs									
Collaborative work									
Competitions									
Conferences									
Construction projects									
Creative/expository writing									
Debate/discussion									
Design projects									
Enterprise projects									
Fieldwork									
Fine-art projects/performances									
Co-op/internship									
Laboratory work									
Research papers/projects									
Senior projects									
Service learning/community-based projects									
Speeches/presentations									
Study abroad									
Supplemental workshops									
University housing programs									

7. TYPE and IMPORTANCE OF ACTIVITIES - OTHER

If the activity is not specified in the list above, please provide the name of the activity in the box below.

Please provide the following information for this activity:

9. Please use this space for any additional comments you wish to provide.

50%

Online Survey Software
Online Surveys powered by SurveyGizmo

Survey Results

Participant Information

Name	Title	Department	Division	Email
Allan Hauck	Chair	Construction Mgmt.	CAED	ahauck@calpoly.edu
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Donald (Don) E. White	Chair	Industrial & Manufacturing Eng.	CENG	
Donald Ryujin	Chair	Ethnic Studies	CLA	dryugin@calpoly.edu
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Rosemary Wild	Chair	Management	OCOB	rwild@calpoly.edu
Stephen F. Hamilton	Chair	economic	OCOB	shamilton@calpoly.edu
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Participant Information

Name	Title	Department	Division	Email
Terry Jones	Chair	Social Sciences	CLA	tjones@calpoly.edu
Tim Dugan	Chair	Theater & Dance	CLA	tjdugan@calpoly.edu
W. Terrence Spiller	Chair	Music	CLA	wspiller@calpoly.edu
Wayne Howard	Chair	Agribusiness	CAFES	whoward@calpoly.edu
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LBD DEFINITIONS

Definition for Department

We educate students in print and non-print digital imaging: printing, publishing, packaging, computer graphics, web development, Internet publishing, digital photography, software and hardware applications, design reproduction technology, electronic publishing, managing technology, and related areas of media preparation, production, and distribution for traditional and digital imaging. We do this in over 33,000 square feet of laboratories housing modern laboratories that support Cal Poly "Learn-by-Doing" philosophy.

project- or problem-based learning

LBD seems to me to refer to any learning that takes place through direct participation in a process with a defined goal. The more a student is in charge of the process itself, both planning and execution, the more I would consider it LDB-based learning. There are several levels of LBD in the Biology department curriculum: 1) prepackaged lab exercises in a class that a student executes themselves as opposed to lecture/book learning 2) laboratory exercises in a class where planning and execution are both performed by the student 3) faculty supervised research project initiated by faculty 4) faculty supervised research project initiated by student These are listed in increasing order of reliance on what I consider a LBD pedagogy. The department also includes opportunities for student directed LBD that is not based in the curriculum. Student Research Competition, College-Based Fee committee, and various clubs are the most obvious examples

All courses have a laboratory component All students are conducting in-department senior projects Students elect to take an additional multi-semester capstone senior design experience Applied curricula

Chemistry is an empirically based science. As such the laboratory experience is an integral part of learning. Courses offered for majors and nonmajors have serious laboratory components which foster inquiry and reinforce concepts. In addition we strongly encourage our majors to participate in undergraduate research under the mentorship of the faculty.

LBD is a process through which students play an active role in learning.

"Learn by doing" is invested in our department through the copious labs and community- and research-oriented internships that our undergraduates take. It has a fundamental, encompassing presence in the practicum and internships of the graduate counseling program.

Students design and implement studies to answer authentic research questions and analyze genuine data sets, frequently with technology. Students also develop their knowledge of theoretical results through derivation and simulation. Students make frequent oral and written presentation of their work. These activities occur throughout the sequence of major courses, culminating in the senior project.

We practice what we teach providing a quality education for our FNR and ENVM graduates. Our FNR program is fully accredited by the Society of American Foresters. Our ENVM program is affiliated with the Association of Environmental Professionals. Our Swanton Pacific School Forest is certified by the Forest Stewardship Council. We are committed to educating students in a learn-by-doing environment preparing students for productive careers. Learn-by-doing experiences are provided both in and out of the classroom in field settings to students where they are fully engaged in the learning. This student pride in their program of study leads to increased motivation to learn...Summarizing, the NRM faculty and staff are committed to excellence in all that we do...

Our communicative approach to language and cultural targets functional competence.

Learn by discovering! Learn by reading. Learn by studying.

hands on opportunities for students to link theory with practice

A hands-on learning experience that provides real world experiences to students that makes them work ready. The Cal Poly Learn-by-Doing Experience is the top level of experience that enables HCS students to Learn. Do. and become Leaders.

LBD DEFINITIONS

<p>When people hear the phrase, “learn by doing,” they oftentimes imagine physical actions—students mixing chemicals in labs, building models in architecture classes, playing the piano. Another typical definition of the phrase involves on-the-job training through programs such as internships and co-ops. Both of these definitions highlight the importance of hitting the ground running when students begin their working lives. However, equally important to hitting the ground running is the ability to adapt to the ever-shifting ground itself. Recent studies have demonstrated that college graduates change careers (not just jobs) several times in their lives, and this fact, combined with a rapidly-changing economy, indicates that the sort of on-the-job training and skills traditionally conceived of as learn by doing paradoxically hurt students rather than help them. In addition to professional training, students also need to master the skills of critical thinking, effective communication, and creative “out of the box” thinking. It is these skills that will best serve our students in the twenty-first century. Happily, the English Department has always emphasized these</p>
<p>Our goal as a department is to teach our students how to understand historical change, to understand themselves and their lives in historical context, and how to develop a sense of the past that can sustain them today. We are unique from many Cal Poly departments, and from many other history departments around the country, for the emphasis that we place on individual projects, close interaction between faculty and student, the rigorous application (especially at the upper-division level) of theoretical and research tools, and the use of senior project as a serious capstone experience. In our department, students learn: 1. From lectures, discussions, reading, and research, to assess sources, to distinguish fact from opinion and to consider an author’s perspective. 2. From lectures, discussions, reading, and research, to recognize varied historical interpretations, to reconcile contradictory information, and to distinguish verifiable from unverifiable information. 3. From lectures, discussions, reading, and research, to demonstrate awareness of other values and traditions, and to place oneself in different cultural and historical contexts.</p>
<p>Experiential learning in a variety of classroom, community and industry settings that meet our mission of advancing leadership and knowledge in recreation, parks, and tourism.</p>
<p>hands on activities, laboratory and design based learning</p>
<p>Theatre, by definition is a performance based discipline. Our curriculum is designed with a balance of theory and practice. Before a student graduates from our program they have participated in a variety of activities based courses including: Acting, Dancing, Directing, Playwriting, Designing and many aspects of Technical Theatre. These courses allow students to put theoretical knowledge into practice through our performances. This is “Learn by Doing,”</p>
<p>All learning is learn-by-doing.</p>
<p>Learn-by-doing for the department means learning from participation in practice oriented education that emphasizes design project experiences, hands-on laboratory activities, team work, and club activities. Students learn by doing by participating in club activities such as concrete canoe, steel bridge, concrete bowling ball, concrete frisbee, water treatment contest, seismic design contest.</p>
<p>The mission statement of our department says that “the Music Department offers a program that develops musical skills and sensitivity, encourages creativity, and cultivates vision for the future.” The department fulfills that mission when it fulfills its goals and “1) introduces students to the role of music in the human experience; 2) helps form personal goals; and 3) develops the discipline, skills, and knowledge to help achieve those goals.”</p>
<p>The hands-on learning that occurs in extensive applied laboratories, activities and extensive work experience that is gained at the Cal Poly Dairy, the Cal Poly Creamery and the Dairy Products Technology Center</p>
<p>Hands-on experience applying principles of effective communication in “real-life” settings.</p>
<p>The faculty didn’t have a precise consensus on a definition, but they seem to feel that it should include: Hands-on relevant experience in one’s academic major. Hands-on experience could then include field trips, internships, co-ops, research projects, class projects, social/academic interactions with important people in the field who are outside of the major department.</p>
<p>Learn-by-doing is an implementation of the polytechnic identity; one that finds a balance/tension between theory and practice. Learn-by-doing is inherently an architectural philosophy as students research, create, test, build, evaluate. Learn-by-doing is an old adage, yet has more resonance than ever for contemporary thinking.</p>
<p>Hands on learning, including project based learning, to provide good grounding in the fundamentals, to develop and use knowledge, skills, techniques, equipment that a professional would use, developing critical thinking and problem solving skills to develop the flexibility to be able to learn new methods/techniques during the career</p>

LBD DEFINITIONS

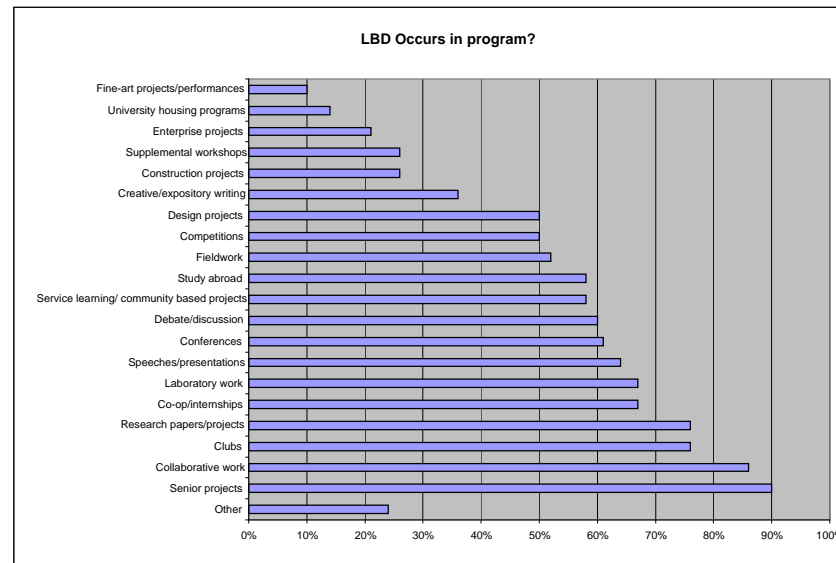
<p>The curriculum provides a sound theoretical background along with current, practical engineering knowledge. The CPE Program exemplifies Cal Poly's "learn by doing" philosophy through a laboratory-intensive approach to Computer Engineering.</p>
<p>Learn-by-doing involves a project, on which the students applies tools and skills taught.</p>
<p>We do not have an articulated definition</p>
<p>Learn-by-Doing happens as students work on the Mustang Daily, CPTV News and Central Coast Perspectives (cq) as well as other labs that produce student work Under supervision by faculty and with guidance from advisors, students practice what we teach and what they will be doing professionally. Students receive feedback from both faculty as well as the constituencies they serve. By way of example, students get feedback from sources on stories as well as comment through letters to the editor for the Daily. Students in CCPR get feedback from clients of the student-run public relations firm.</p>
<p>Learn by doing is the Army's philosophy and our program is run by students for students with cadre / professor oversight. Everything we do is learn by doing &quot;Learn by doing&quot; for CRP is student engagement in real-world problems related to the discipline and the application of skills and knowledge sets to develop solutions. This takes the form of working with real clients, in real time settings, normally using studio based course pedagogy.</p>
<p>Experiential learning through hands on instructional laboratories, team bases design-build-test projects, active learning classroom environments, and interaction with industry and the community that give our students practice at original thought and essential skills.</p>
<p>Students at Cal Poly are provided realistic learning opportunities through a problem or project based pedagogy supported by practicing professionals in the respective disciplines. This is further enhanced through active programs in internships, field trips, and senior projects.</p>
<p>"Learn-by-Doing" is a catch-phrase that refers to a highly effective learning philosophy and learning approach that involves delivering real-world, practical projects/activities using hands-on methods that apply theory to practice. The Cal Poly, CENG, and IME mission statements all refer to "learn-by-doing". The ABET "Immediate Practice" educational objective for the IE and MfgE programs reflects the "learn-by-doing" approach. See below: Cal Poly Mission Statement Cal Poly fosters teaching, scholarship, and service in a learn-by-doing environment where students and faculty are partners in discovery. As a polytechnic university, Cal Poly promotes the application of theory to practice. As a comprehensive institution, Cal Poly provides a balanced education in the arts, sciences, and technology, while encouraging cross-disciplinary and co-curricular experiences. As an academic community, Cal Poly values free inquiry, cultural and intellectual diversity, mutual respect, civic engagement, and social and environmental responsibility. CENG Mission The mission of the College of Engineering is to educate our students for</p>
<p>Actively engaging in the doing of physics. Individually or as part of a group, make measurements, do calculations, write computer programs, design an experiment, prepare/present a talk or paper.</p>
<p>Learn-by-doing means that students are involve in activities (active learning - both in and out of the classroom) that allows them to practice, discover and develop knowledge, skills and abilities that are aligned with our program outcomes.</p>
<p>We have three very different concentrations in our area (what we call "departments" in the OCOB) and each addresses learn-by-doing differently. In the Information Systems concentration, students engage in the design and development of information system applications such as database development, eCommerce site development, Enterprise Resource Planning (ERP) application development, etc. Classes are studio based and involve a great deal of hands-on learning. In addition, students often develop systems for outside clients as part of their senior project experience and participate in internships with various firms throughout the state. Students in Management/HR work on projects with local companies on HR issues and also engage in senior projects with outside clients. Students in International Business engage in business simulations in which they need to respond to scenarios provided by making business decisions that will have an impact on their simulated firm's performance. They learn to appreciate the difficulty of decision making in an uncertain and dynamic environment.</p>
<p>Supplementing the traditional lecture/demonstration theoretical education by having the student contribute to their own education through practical real-world applications using their visual, sensory, tactile, and physical skills.</p>
<p>Learning through actual hands-on participation involving real life contexts, actual data, and/or laboratory applications</p>

LBD DEFINITIONS

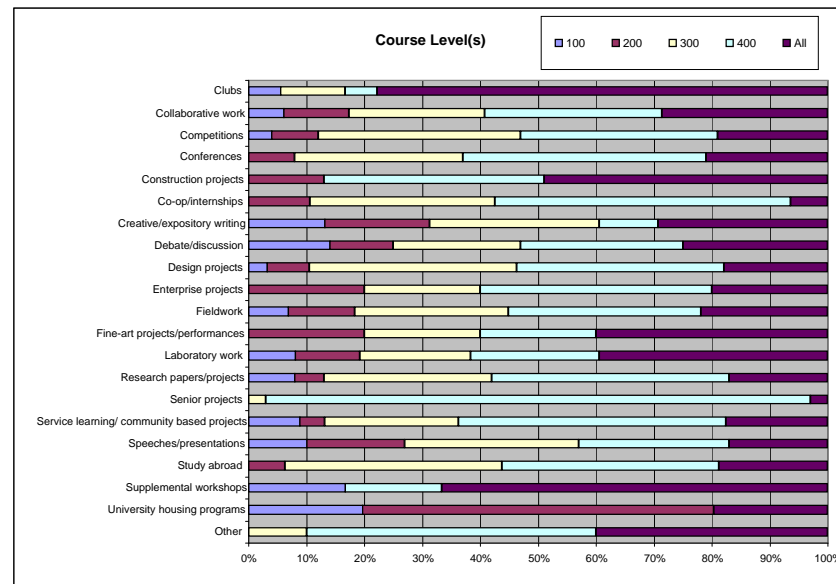
Definition for Cal Poly
Classes that are supported by "hands-on" laboratories in which students participate in projects, tests, experiments, emulating what occurs in the profession representing their major. This is in contrast to merely observing demonstrations.
Being alive. Time management, study management, scheduling etc...
See the definition above.
Developing and deepening one's knowledge through direct engagement of hands-on, authentic tasks as relevant to different disciplines.
Our department and program learn-by-doing goals/objectives are tiered to the CAFES and Cal Poly Vision, Mission, Goals and Objectives. The definition I provided above for the NRM department is consistent with what is expected at the college and university level given our polytechnic focus working to educate our students for their future.
Learn by discovering!
We maintain that our definition above works for all disciplines at Cal Poly. In the twenty-first century we cannot afford to define a university education by specialized, professional training alone, as traditional definitions of LBD might. Instead, we need to capitalize on Cal Poly's great strengths as both a polytechnic and a university. Students will still produce a product (traditional polytechnic), but they will also understand the process by which they created it (traditional university). They will develop critical and creative thinking skills that enable them to imagine a better product, and they will have the hands-on experience to create it. By adopting this definition of learn by doing, Cal Poly will graduate students with the necessary understanding and skills to adjust to the ever-changing demands of the twenty-first century.
hands on activities
Hands-on experience applying principles learned in an academic setting into play in "real-life" settings.
Unfortunately, the concept of learn-by-doing for Cal Poly, in general, seems to have a more limited "feel" to it; it's more like on-the-job experience.
Learn-by-doing at Cal Poly is a process that involves team teaching and most importantly team learning. Learn-by-doing at Cal Poly is about nurturing the students' curiosity with hands on learning experiences. Learn-by-doing at Cal Poly is to believe that experiential educational objectives are part of the instincts every professional needs to have to confront today's issues.
Providing opportunities via internships, enterprises, community service projects. The technical colleges seem to stress techniques, laboratory equipment.
Just change the laboratory-intensive and computer engineering to a program at Cal Poly, and the appropriate method used to apply the learn-by-doing by a "hands on" approach.
Experience/apply learning objectives.
Generally speaking, the model described above is the practice at Cal Poly. There have been some instances in which learn-by-Doing is a matter of a supervisor telling students what to do and then leaving to their own devices with mixed results.
Same as above.
For Cal Poly, the definition in the mission speaks of "students and faculty are partners in discovery" and "encouraging cross-disciplinary and co-curricular experiences." Therefore, for Cal Poly "learn-by-doing" might be more broadly described as "experiential learning."
Actively engaging in the doing of xxxx.
no difference

Type and Importance of LBD Activities

Occurs in program?	Yes
Other	24%
Senior projects	90%
Collaborative work	86%
Clubs	76%
Research papers/projects	76%
Co-op/internships	67%
Laboratory work	67%
Speeches/presentations	64%
Conferences	61%
Debate/discussion	60%
Service learning/ community based projects	58%
Study abroad	58%
Fieldwork	52%
Competitions	50%
Design projects	50%
Creative/expository writing	36%
Construction projects	26%
Supplemental workshops	26%
Enterprise projects	21%
University housing programs	14%
Fine-art projects/performances	10%

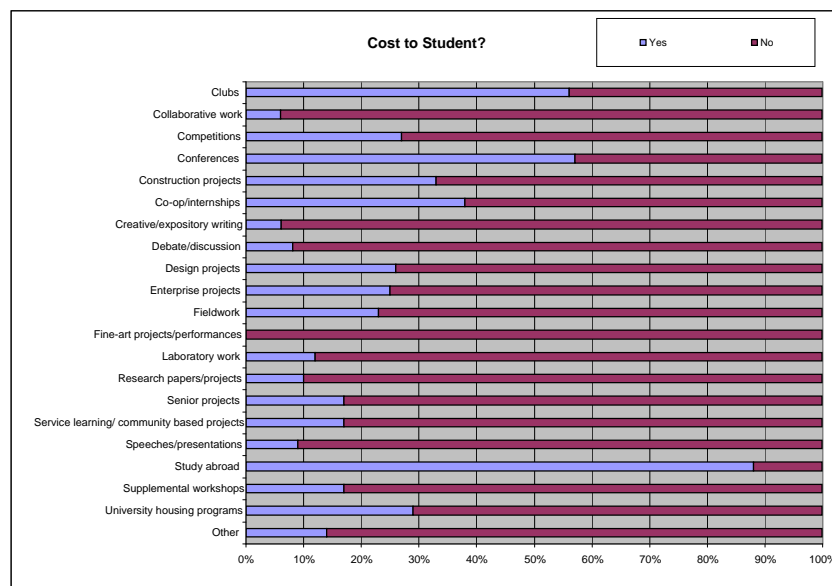


Course level	100	200	300	400	All	TI
Other	0%	0%	10%	50%	40%	100%
University housing programs	14%	43%	0%	0%	14%	71%
Supplemental workshops	11%	0%	0%	11%	44%	66%
Study abroad	0%	6%	36%	36%	18%	96%
Speeches/presentations	10%	17%	30%	26%	17%	100%
Service learning/ community based projects	8%	4%	21%	42%	16%	91%
Senior projects	0%	0%	3%	93%	3%	99%
Research papers/projects	8%	5%	29%	41%	17%	100%
Laboratory work	8%	11%	19%	22%	39%	94%
Fine-art projects/performances	0%	20%	20%	20%	40%	100%
Fieldwork	6%	10%	23%	29%	19%	87%
Enterprise projects	0%	20%	20%	40%	20%	100%
Design projects	3%	7%	34%	34%	17%	95%
Debate/discussion	14%	11%	22%	28%	25%	95%
Creative/expository writing	13%	18%	29%	10%	29%	100%
Co-op/internships	0	10%	30%	48%	6%	94%
Construction projects	0%	13%	0%	38%	49%	100%
Conferences	0%	8%	29%	42%	21%	100%
Competitions	4%	8%	35%	34%	19%	100%
Collaborative work	6%	11%	23%	30%	28%	98%
Clubs	5%	10%	10%	5%	70%	100%

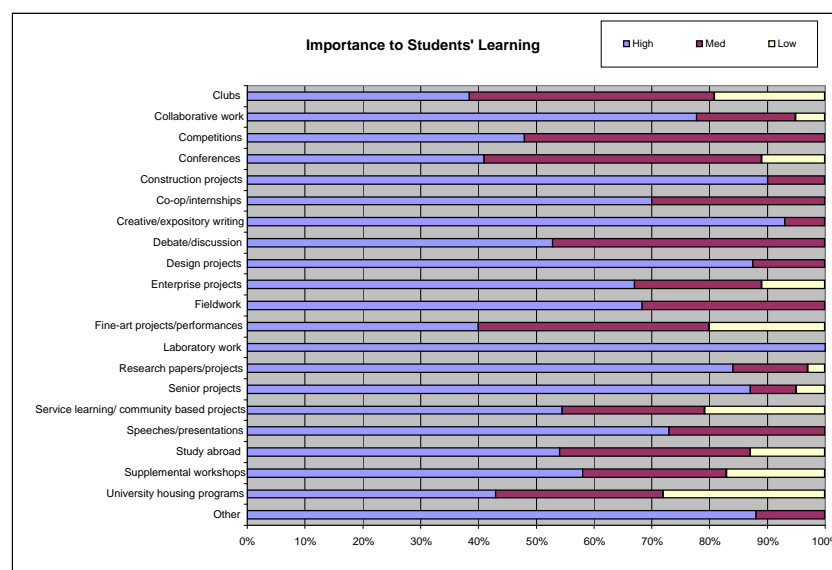


Type and Importance of LBD Activities

Cost to student?	Yes	No	TI
Other	14%	86%	100%
University housing programs	29%	71%	100%
Supplemental workshops	17%	83%	100%
Study abroad	88%	12%	100%
Speeches/presentations	9%	91%	100%
Service learning/ community based projects	17%	83%	100%
Senior projects	17%	83%	100%
Research papers/projects	10%	90%	100%
Laboratory work	12%	88%	100%
Fine-art projects/performances	0%	99%	99%
Fieldwork	23%	77%	100%
Enterprise projects	25%	75%	100%
Design projects	26%	74%	100%
Debate/discussion	8%	91%	99%
Creative/expository writing	6%	93%	99%
Co-op/internships	38%	62%	100%
Construction projects	33%	67%	100%
Conferences	57%	43%	100%
Competitions	27%	73%	100%
Collaborative work	6%	94%	100%
Clubs	56%	44%	100%

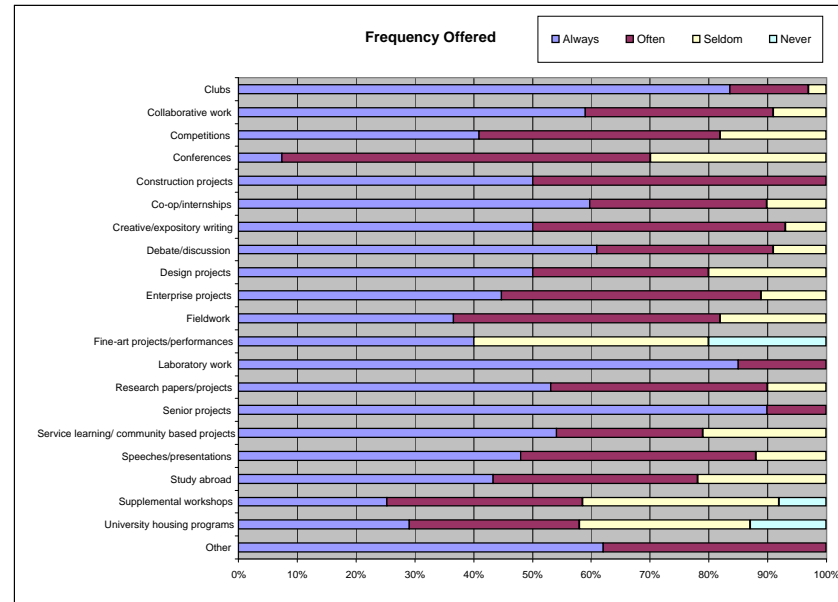


Importance to students' learning	High	Med	Low	TI
Other	88%	12%	0%	100%
University housing programs	43%	29%	28%	100%
Supplemental workshops	58%	25%	17%	100%
Study abroad	54%	33%	13%	100%
Speeches/presentations	73%	27%	0%	100%
Service learning/ community based projects	55%	25%	21%	101%
Senior projects	87%	8%	5%	100%
Research papers/projects	84%	13%	3%	100%
Laboratory work	100%	0%	0%	100%
Fine-art projects/performances	40%	40%	20%	100%
Fieldwork	69%	32%	0%	101%
Enterprise projects	67%	22%	11%	100%
Design projects	70%	10%	0%	80%
Debate/discussion	37%	33%	0%	70%
Creative/expository writing	93%	7%	0%	100%
Co-op/internships	70%	30%	0%	100%
Construction projects	90%	10%	0%	100%
Conferences	41%	48%	11%	100%
Competitions	48%	52%	0%	100%
Collaborative work	77%	17%	5%	99%
Clubs	38%	42%	19%	99%

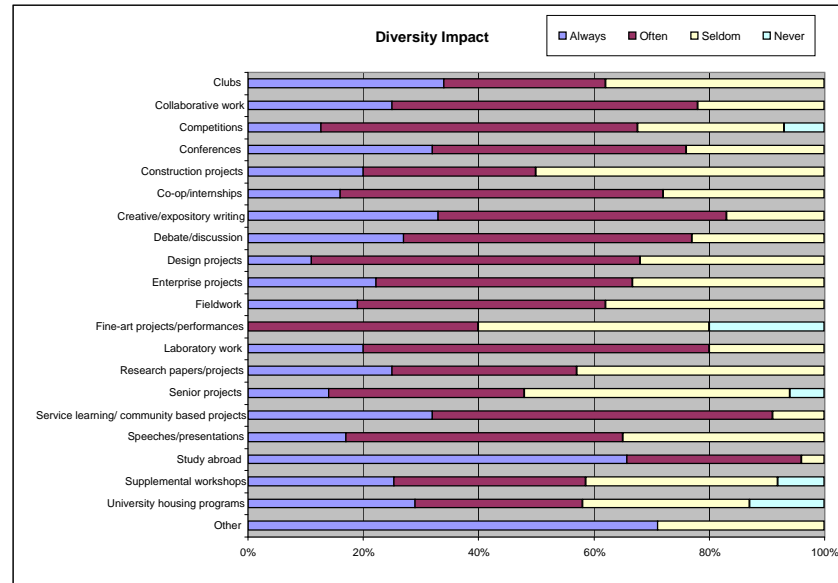


Type and Importance of LBD Activities

Frquency Offered	Always	Often	Seld	Never	TI
Other	62%	38%	0%	0%	100%
University housing programs	29%	29%	29%	13%	100%
Supplemental workshops	25%	33%	33%	8%	99%
Study abroad	43%	35%	22%	0%	100%
Speeches/presentations	48%	40%	12%	0%	100%
Service learning/ community based projects	54%	25%	21%	0%	100%
Senior projects	89%	10%	0%	0%	99%
Research papers/projects	53%	37%	10%	0%	100%
Laboratory work	85%	15%	0%	0%	100%
Fine-art projects/performances	40%	0%	40%	20%	100%
Fieldwork	36%	45%	18%	0%	99%
Enterprise projects	44%	44%	11%	0%	99%
Design projects	50%	30%	20%	0%	100%
Debate/discussion	61%	30%	9%	0%	100%
Creative/expository writing	50%	43%	7%	0%	100%
Co-op/internships	59%	30%	10%	0%	99%
Construction projects	50%	50%	0%	0%	100%
Conferences	7%	63%	30%	0%	100%
Competitions	41%	41%	18%	0%	100%
Collaborative work	59%	32%	9%	0%	100%
Clubs	83%	13%	3%	0%	100%



Diversity Impact	Always	Often	Seldom	Never	TI
Other	71%	0%	29%	0%	100%
University housing programs	29%	29%	29%	13%	100%
Supplemental workshops	25%	33%	33%	8%	99%
Study abroad	65%	30%	4%	0%	99%
Speeches/presentations	17%	48%	35%	0%	100%
Service learning/ community based projects	32%	59%	9%	0%	100%
Senior projects	14%	34%	46%	6%	100%
Research papers/projects	25%	32%	43%	0%	100%
Laboratory work	20%	60%	20%	0%	100%
Fine-art projects/performances	0%	40%	40%	20%	100%
Fieldwork	19%	43%	38%	0%	100%
Enterprise projects	22%	44%	33%	0%	99%
Design projects	11%	57%	32%	0%	100%
Debate/discussion	27%	50%	23%	0%	100%
Creative/expository writing	33%	50%	17%	0%	100%
Co-op/internships	16%	56%	28%	0%	100%
Construction projects	20%	30%	50%	0%	100%
Conferences	32%	44%	24%	0%	100%
Competitions	9%	39%	18%	5%	71%
Collaborative work	25%	53%	22%	0%	100%
Clubs	34%	28%	38%	0%	100%



"Other" Activities

capstone design sequence CPE 350 and CPE 450
Collegiality
Constructivist learning activities (in class)
Internship
N/A
Project Based Learning Institute (PBLI) and Sustainability Projects
University Graphic Systems (UGS) - Experiential student run and managed printing and publishing company.
Using real world data to solve problems and draw inferences. Very important to think in dynamic environment where data arrives in real time.
Volunteer Income Tax Assistance Program (VITA)
We have a Student Affiliate Chapter of the American Chemical Society which is free to all students and a professional chemistry fraternity, Alpha Chi Sigma, which requires a financial commitment. We also have outreach programs which involve our students.

requires a financial

DESCRIPTION AND ASSESSMENT OF ACTIVITIES

Activity	Assessment
Student interaction	Achievement of goals
interaction with industry, teamwork, and peer leadership	interaction with industry, teamwork and peer leadership college-wide rubrics
KME Honor Society	Admittance based on academic performance.
discussion, peer interaction, supplemental workshops	none
interaction with actual "clients"; #2, 3, 4 (above)	none
Conference & event planning	surveys
building rockets, satellites, airplanes	not a class, no ABET assessment
Rehearsal and Performance	faculty critique/audience response
Participation in projects for various competitions	Competition results, reports
Leadership	none
Leadership	none
Community service (such as beach cleanups), guided outdoor recreation, oral/powerpoint presentations, critically listening to guest speakers, social interaction	Participation surveys, anecdotal summaries from students
project, leadership	employment criteria
Organization, leadership	OCOB assessment plan
Networking with PR professionals and working on PR projects	The club advisor observes and reviews
Student Run	Successful events
team based, often design-build-test, original thought	often competitions
Student led organizations	Annual Awards
Engage in many activities, especially with industry representatives	The OCOB assesses leadership as part of its quarterly assessment process
Trips, speakers, structural forum	anecdotal
Field trips	not assessed
Group projects	Completion of projects
collaborative work on marketing problems	peer and college-wide rubric
teamwork, various mode of communication	Specific assessments methods adhering to ABET requirements.
Summer research; student work on open problems with faculty advisors	Results submitted to advisor; occasionally results are published and/or presented
peer interaction, open-ended investigations	oral presentations and written reports
FNR 260,FNR 416 class projects	Grading rubric, employer surveys
interaction with peers and faculty	none
volunteer community work & group work	direct and indirect assessment
team design project	design portfolio, senior survey
Rehearsal and Performance	faculty critique/audience response/ external reviews

DESCRIPTION AND ASSESSMENT OF ACTIVITIES

Activity	Assessment
Participation in lab-based projects	Reports
Idea development	Faculty oversight
Hands on experience in field work, laboratory analyses, teaching experiences (to public or school children), developing lesson plans, grading introductory level undergraduate work, presentations at professional meetings	Observation, anecdotal summaries
multidisciplinary	abet assessment
teamwork, research	grading
team leadership, presentation skills	OCOB assessment plan
PR students will collaborate with professionals. For many student projects, collaboration with other students is required	Faculty observe and assess project outcomes. The Club advisor does continual review
Develop and submit briefings / planning of events / weekly running of the cadet battalion	grades, peer / cadre evaluations
team based	reports, oral presentations
In all courses	Grades
Students work on projects in which they are jointly responsible for deliverables	Class grade and often incorporated into the OCOB assessment process
real life contexts	exit survey
Creation of submissions	Rating in competition
Putnam and Modeling Competitions	Scored and judged nationally
national competition design project	design portfolio, senior survey
Audition Process	faculty critique
Projects for competitions	Competition results
Skill development	Peer evaluation
Soil judging - describing, classifying, interpreting soils and land use practices as a professional would do, in the field	Scores on competition, anecdotal summaries from students
projects	outcome of competition
develop plans and presentations	competitions
Students enter competitions through student-professional organizations	Awards for meritorious work and comments from judges provide assessment
Organizing and establishing training schedules / multi school events	ranking, peer / cadre evaluations
often team based, often design-build-test, original thought	varies
National and regional against numerous other universities	Awards from panels of practitioner judges
Students travel to compete after preparing together for the competition	Their final standing after the competition
developing an entry	competition performance results
Student presence and involvement	Feedback from industry conference attendees
Students attend national conferences in math; sometimes they present	No Assessment
Attend Workshops/Productions	post conference dialogue with faculty
Students learning form others	None

DESCRIPTION AND ASSESSMENT OF ACTIVITIES

Activity	Assessment
Making travel, lodging, and meal arrangements, writing a proposal to dept. CBF committee, attending conference and paying attention to technical sessions, interacting with professionals, presenting work as poster or talk paper presentation	Observation of students by faculty and staff, post-conference presentations by student attendees, anecdotal summaries peer evaluation
Students attend professional-student organization conferences	Students are required to attend sessions in order to receive travel support and students report on their conference activities in classes and club meetings
Student driven events, 1-2 annually w/other ROTC cadets	After Action Reports from cadets
Attend with faculty members	None
Students prepare for conferences as part of a project management undertaking	learning reflection
Produced by student(s)	Meets criteria of assignment
Hands on scenic construction	faculty critique/audience response/ external reviews
laboratory exercises	course grade
Typically part of classes or service learning	Grades
Scenewriting and Playwriting	faculty critique/audience response
lab report, senior project	course grade
Senior seminar (Math 459, 460); students present topics.	Students receive grades
Research, idea development, critical thinking	Faculty oversight, alumni input, participant assessment, success in competitive debate environment
team work assignments	course grades
critical thinking	grading
multiple reviews with industry	design portfolio, presentation evals from industry
Design studios	Reviews conducted by faculty and public review
learning client needs	course work project
In the IS concentration students design and develop information system applications in teams	Part of class grade as well as a component of the OCOB discipline based assessment learning objective
do the work	grading
Field labs Swanton Pacific	Grading rubrics, embedded questions in exams
actually being in clinical setting to apply knowledge	grade in course
Application, assessment skills	Client assessment, faculty oversight

DESCRIPTION AND ASSESSMENT OF ACTIVITIES

Activity	Assessment
Actually working with individuals from different ethnic groups	Grading of the reports concerning the interaction.
Actively teaching a class.	Teacher/mentor evaluates.
practice/rehearsal/performance	performance evaluation in lesson and rehearsal/performance critique
specific projects within a company	series of reports, assessment of the company liason
FNR 339 Internship	Student and employer feedback
#1, 2, 3, 5	none
Application	Faculty oversight, client assessment
Work in an office for at least a quarter	Internship regulations and architects' review of the work. Faculty review at the end of the quarter
application of concepts in real world setting	OCOB assessment plan
being supervised by professionals	supervisor evaluation and internship paper
Students work with firms in their concentration areas	Firm representatives provide reports and faculty advisor grades the student's final paper
working in actual firm	feedback from employer and student
design, implementaiton, testing of software code	grades, run through test cases
use of lab equipment, safety, computation, etc.	lab reports, senior projects, presentations at local, regional and national meetings
Exercises in lab and in the field	student performance, grading rubrics, employer surveys, embedded questions
hands on "practice"	grade in course
in the field and classroom	faculty assessment
Laboratory testing	Reports, exams
Same as feild work our labs are our extensive prep period for final eevaluations summer between 3rd and 4th year	peer and cadre evaluation cards for assigned leadership positions, student lead after action reviews immediately after the situational exercise
assessing needs, making presentations	course work project, client letters
Lab projects and the making of physical devices embody all key elements of learn by doing activities.	Course grades
Students learn material presented in lectures by observing and measuring natural phenomena.	Inclusion of lab based material in written exams.
Summer research: student work on open problems with faculty advisors. May double as a senior project or master's thesis	Results submitted to advisor; occasionally results are published and/or presented
gaining more theoretical knowledge	grade on paper
#1, 2, 3, 4, 5, 6	Assessment with rubric

DESCRIPTION AND ASSESSMENT OF ACTIVITIES

Activity	Assessment
connection to industry trends	faculty assessment
Individual research projects	Reports
research and write papers	grading/guidance of writing process and product
Must do library and field work with/on people of different ethnic/gender backgrounds	Grading of the product
Literature reviews, interpretations, learn proper professional wordsmithing	Term papers, term projects, oral reports
Papers are done in MSL 240 / 400 series of classes, projects are done in all MSL Classes	cadre and peer evaluations, grading rubric for papers
Research/projects apply many courses the knowledge of which are applied to the project deliverables.	Course grades and Customer assessment
Students work on collection of material , surveying and summarizing it. Projects may include experiences in lab including solution of real-world problems	Preparation of reports, accomplishment of experimental or computational task.
actual data	exit survey
develop, design implement a senior project	grades, presentations to Industry advisory Board
Collaboration of student with faculty advisor and sometimes with other students.	Senior projects are graded
independent study of topic beyond curriculum	oral and written report
Project based learning	grading rubrics, employer surveys
gaining more theoretical knowledge	grade in course
#1, 2, 3, 4, 5, 6	Assessment with rubric
applied research	faculty assessment
varies with project	evaluation by industry, senior survey
advanced studies in an area of interest	Faculty evaluation
Working on real-life projects	Presentations, quiz, exam, report
student guided/ranges from research (scholarly and pedagogic) to composition to performance	Idiosyncratic to nature of project
Appliation	Faculty oversight
Typically involve some hands-on work with individuals from different ethnic groups	Grading of the senior projects
Iteration process from concept to full scale	Weekly faculty review and end of the year Chumash show where the public is invited to view the work
Study design, sampling protocol, field techniques as appropriate to the project, laboratory techniques as appropriate to the project, professional writing skills, professional presentation skills	Faculty evaluation of senior project report
research	
working with clients and then desiging products that help them.	final senior project paper
team based, design-build-test, original thought, interaction with industry and/or community	oral presentatin, design review, design expo, design notebooks
Group and individual projects	Grades
Students work on a project that they are particularly interested in. They read original papers under minimum supervision and carry out lab measurements	Instructor checks lab work. Preparation of a final report

DESCRIPTION AND ASSESSMENT OF ACTIVITIES

Activity	Assessment
self learning, project deliverable, presentation	formal grading of report by faculty advisor, grading of presentations by outside sources
real life contexts, actual data, laboratory applications	exit survey
	Course grades
addressing marketing challenges for local nonprofits; various international	various course and program rubrics
authentic application	oral and written reports
working in community with actual "people"	reflection assignments and course grades
#3, 4	none
class assignments, required 1,000 hours of volunteer or paid experience	some faculty assessment, some indirect student assessment, some advisory council assessment
Working on community projects	Presentations, quiz, exam, report
Application	Faculty oversight, client assessment
Actually work with different ethnic groups or gender involved groups in the community	Grading of the project/papers that result from this work
application in real world environment	
Contracted cadets do twice year some community service or support work	After action review: written
interaction with community	oral presentation
Elective course and through clubs	Grades and external evaluations
Service Learning projects are just projects done as a service for the community or clients in the community. The PolyHouse projects (See polyhouse.org) are examples, as was the Zimbabwe brick making machine project and several sustainability projects.	Course grades and Customer assessment
Designed by student(s)	Meets criteria of assignment
presenting research findings and marketing recommendations	college-wide rubric
oral reports	oral reports
oral and visual communication that allow students to bridge theory with practice	course grades
#1, 2, 3, 4	none
presentations of LBD projects	faculty and industry guest assessment
Presentations on projects during various classes	Report grade
student researches and organizes materials, learns how to present publicly	Graded evaluation of research and organizational process, and of presentation
Weekly discussions and bi-quarterly presentation (orally and visually)	Weekly faculty discussions
Researching topic either as lit review or as field/laboratory analyses and interpretation, learn Powerpoint use, professional presentation skills	Faculty evaluation of presentation
presentations in class/lab	course grade
Students in a number of classes are required to make presentations, including group presentations, each quarter	Faculty review and assess
Cadets are actively involved in recruitment and present and brief operations orders during lab. Additionally, all MS classes involve some power point presentations	Peer and cadre evaluations

DESCRIPTION AND ASSESSMENT OF ACTIVITIES

Activity	Assessment
practice essential skill	oral presentation
In all courses	Grades
real life contexts	exit survey
	specific rubrics for ABET assessment
	OCOB assessment plan
Involved in activities of the major	Faculty advisor assessment
experiencing another culture first-hand	learning reflection & course rubrics
Cal Poly IPP program	Courses taken abroad are graded.
#2, 3, 4	none
Exposure to international viewpoints and professional theatre of the highest quality	self critique and faculty evaluation
Students in study abroad	Grades in classes taken during study abroad
My department does not conduct study abroad but we encourage it, as a generally enriching experience. Occasionally, study abroad includes courses or projects specific to the earth sciences, in these, students usually learn site-specific and course-specific	Anecdotal summaries from students, student presentations
global experience	degree progress
understanding other cultures	OCOB assessment plan
A number of students take advantage of the study abroad program	Faculty review proposed study abroad courses
Some military run, but money is available through the Army to do a 1/4er if foreign language based	After action review; written and cadet self-assessment
interaction with world community	varies
Available to all students	Faculty evaluation of participating students
Study Abroad projects are projects and thereby typically involve global issues.	Advisor feedback and Course grades
real life contexts	exit survey
Students work on hard problems in groups	CR/Nc grading used
practical skill development	none
Adds breadth to curriculum	Student feedback to faculty
masterclass (public lesson) performance opportunities with resident faculty and guest artists	performance critique
Specific to Introductory Soil Science; students enhance skills, student facilitators develop presentation and teaching skills	Student performance in the associated lecture section; for facilitators, we assess by anecdotal summaries from the facilitator
From time to time, guest speakers and industry representatives come to campus to make presentations to classes and open forums	Faculty propose guest speakers and attend sessions
	learning reflections
#3, 4	none
study group/co-curricula activities	student academic services assesses
constructivist learning	quizzes and exams
project development and interaction with customer	course grade

DESCRIPTION AND ASSESSMENT OF ACTIVITIES

Activity	Assessment
application in real world environment	
Sustainability projects are focused on that topic. For example with the Bio-diesel project, students built a mobile processing unit that takes used vegetable oil from the on-campus food service system and converts it into bio-diesel that is used to power	Customer assessment and/or course grades

COMMENTS

The LBD philosophy is embedded in the concept of a polytechnic university. Empiricism is the basis of science inquiry. Our goal is to acquaint nonscience majors to the objective methods employed by chemistry and to encourage critical thinking which extends beyond the classroom and lab. For our science majors we have constructed a progressive system of investigation into the concepts and techniques used to discover, understand, and extrapolate current theory. We encourage curiosity, inquiry and dispassionate discourse about the basis of what constitutes the universe around us.

We interpreted many of the phrases above as pertaining to the statistics curriculum such as "laboratory exercises," "using statistical software and pedagogical activities on the computer" and "fieldwork" = "gathering data through face to face interviews"

I have highlighted only a part of the variety of learn-by-doing approaches we take to facilitate and motivate student learning in our FNR/ENVM classes. Please contact me should you require further information. Best Regards Dr. Doug

My colleagues would have preferred that a working definition of "earn-by-doing" have been provided.

Learn by doing was the appropriate motto when farmers were brought to Cal Poly to learn about the latest methods of farming and animal husbandry. The time for the program would not let me unselect yes/no for fields that I decided were not applicable and removed.

Learn by doing philosophy is absolutely essential for our programs - it is one of several factors that set our undergraduate programs in earth sciences and especially in soil science apart from (superior to!!) those of other universities in the U.S.

The Journalism Department is a professionally oriented program that focuses on a balanced approach teaching the philosophies and social responsibilities of professional media as well as the skill sets and critical thinking skills that students will need upon graduation. It is based on the recognition that the media serve democracy and, as such, have obligations to effectively communicate information that an electorate needs to be informed. As such, the process of Learn-by-Doing is important as it represents an opportunity for students to practice that they will be doing professionally while serving the important function of informing the collegiate audience of things that it needs to be able to make choices.

Student involvement in project planning and community planning labs courses create the opportunities to integrate skills sets, face real world problems that may not Clubs, competitions, co-op/internship research papers/projects and study abroad are all learn by doing opportunities that our department offers and encourages but they are not part of our required curriculum.

In this self study process and strategic planning, there is not enough emphasis on facilities. The biggest weakness at Cal Poly and the biggest detriment to a learn by doing environment is the dilapidated, overcrowded classroom and laboratory facilities. There is nothing in the strategic plan and appears to be no emphasis on rehabilitating and fixing these.