

CAN'T GET NO RESPECT: THE COMPREHENSIVE PUBLIC UNIVERSITY

STARBUCK

Before a person signs on to be a provost or academic vice president, I advise clandestine activity. Do not comb your hair. Don a stained sweat suit. Wear sandals, no socks. (When I started out the door *incognito*, my wife vetoed the look. She said, sorry, not a disguise. Try something clean.) Anyway, head for a coffee house near the target campus. Look for people who are dressed the same way. If they each look over both shoulders before leaning in to whisper, they are wary, with grudges. They are faculty whom you must hear out. But you must win confidence first. The next step comes naturally; you were a graduate student once. Go to a deserted table that they can see. Pour the dregs from several cups into a mug; swirl. Then, sit with your future critics. Your task is to imitate Socrates, only snidely. Ask just a few rhetorical questions and lob a few sarcastic comments about the president. Then listen.

Who is this president, you want to know? Ahab, chasing the flagship university? Captain Queeg, locking the cabin in the morning and raging onto the bridge in the afternoon? Perhaps she has unresolved issues, as in me Abraham, you Isaac? I pieced together that I was signing on with FDR. Her weapon of choice was the fireside chat, minus the fire but with coffee. We meet in small groups with the tenure-track faculty, the recently tenured faculty, and a large number of senior faculty each year (no clusters from a department). The campus has over 800 faculty in tenure lines. After all that coffee, I have made good friends in the Betty Ford Center.

A MANY SPLENDID THING

These chats are open discussions. But the president orchestrates them so that, after an hour and a half, most attendees are clearer about the university beyond their departments. These chats create a space for inquiry outside of governance and the gaze of more senior faculty. Most questioners want to know how a specific function or activity fits into the university. Why does the bookstore sell coffee mugs and mark up the price of texts? What is it doing in a university? The president's responses shape a common language that is flexible enough to capture the speakers' perspectives yet objective enough to denote the subject. Academic dialects and tribal habitats in departments make it difficult to see common ground and speak in common. Difficult, however, is not impossible.

Over time, these questions and responses amount to an account of the state university. This chapter, therefore, takes on two tasks. It explains the basic functions and purposes of the state university, while it suggests the professoriate's attitude about them. A newly hired assistant professor who thinks that the university will be organized around higher learning will discover yes but no. The most basic account indicates complexity (Duderstadt, Chapter 2). The

complexity drives and is driven by contentiousness over master terms. Here, students *learn*, constructing meaning collaboratively. Well, no, here we *teach* what research reveals. Yes, but the students are best considered as *customers* who shop for classes that are pertinent to careers. They know better than the university about what they should do. Indeed, they are customers because the entire university is a *business*. Does not the transfer of knowledge to students imply an exchange of fees for a commodity?

The chats, therefore, are the president’s way of reducing the ideological presumption in descriptions. Chatting across differences happens rarely in universities.

The specific questions point to a deeper anxiety. Occasionally, the anxiety erupts. Why is the state university not like the pillared *college* on the manicured lawn where *culture* matters? Are we a college, or are we content providers for an *ISP*? What is next? *Unbundling functions*? Are we contracting for network services, web design, and market placement?

Implicit is the suspicion that the *virtual university* is at odds with the *regional university*. It is a *clinic* where students, directed by faculty, treat the public. It is a *health and counseling center* for students and residents.

It is residential *hotel*. Many guests still insist on a living and learning experience, enhanced by boutique food and exercise facilities.

It will always be part of a regional K-12, in which teachers *remediate* freshmen who graduate from high school, meet all the requirements for public university, but perform poorly on entry exams.

Actually, it is like a knowledge *outlet store* within K-16. It honors coupon-like transfer statements that customers turn in as equivalencies to local courses.

As the state decreases its support, it is an *opportunistic think tank*. It contracts for services that fund the development of expertise. Meanwhile it cuts back its free services to the public.

It is hard to see the cohesion in these functions .The public comprehensive university—the subject at hand—already had a conflicted nature, before it acquired these functions. Despite the

2007	ENROLL					
IIDS	# INST	12 FTES	12 HC	SUM HC	%	SFR
PUBLIC						
PHD	166	20,230	26,180	4,345,946	19	14
MA	271	7,941	11,455	3,104,197	14	19
BA	90	3,222	4,750	427,482	2	18
ASC	1,001	4,251	10,297	10,307,497	45	21
NFP				18,185,122		80
PHD	91	10,691	13,340	1,213,958	5	8
MA	321	3,461	5,086	1,632,638	7	16
BA	486	1,530	2,003	973,555	4	14
ASC	107	692	960	102,699	0	18
FOR PR				3,922,850		17
PHD	2	13,740	20,339	40,677	0.18	61
MA	10	5,376	11,834	118,337	1	47
BA	14	1,805	3,591	50,268	0.22	22
ASC	420	944	1,319	553,896	2	27
				763,178		3

3,100,000 students who enrolled in 271 of these BA and MA-granting schools in 2007, they are *terra incognita* on the allegorical map of higher education (Carnegie Classification, 2000: 1-2; and see the tables, <http://classifications.carnegiefoundation.org/resources/>). On one side are the kingdoms of the research and doctoral university. They advance knowledge as their principal mission, but they disseminate it, too. On the other is the realm of the community college in

which vocational training is the principal function, although it also prepares high school graduates who bloom late and reentry adults for transfer to universities. A symbolic sun shines a golden light on liberal arts colleges in the distance. They concentrate, presumably, on teaching undergraduates and leveraging the intensity and intimacy of residential life to mold character and encourage collaborative learning.

These characterizations simplify. However, we do not carry in our minds a simple image of a comprehensive. Mongrel? Somewhat residential, somewhat vocational, somewhat global, and somewhat entrepreneurial, it resists typing despite its Carnegie classification. Teaching at the People’s University contains a helpful table of the features of kinds of colleges and universities (Henderson, 6). Moderate in cost, medium in size, and middling in academic challenge, the public comprehensive is assembled from others’ parts. Its conflicting tendencies blur identity, and missing characteristics (research classification, residential categorization), diminish visibility.

Entering a comprehensive to teach directly after immersion in graduate study is like entering a funhouse of mirrors unless, of course, one has worked there as an adjunct (Dalbey). The familiar is foreshortened here (time to research), elongated there (time to teach). (See, to the right, the higher teaching load, Student-Faculty Ratio, and number of hours for teaching in PUBNPHDs.) And straight-ahead of you is your mirror image. Suddenly it darkens. Pin-wheeling out of the dark is an image of Munch’s “Scream.” Spontaneously, you clasp your ears and open your mouth.

NSOPF 04-5	#CL	INSTR X	%RSCH	HR/WK	TILPUB	SFR
PUBPHD						
PR	2	47	34	57	94	13
ASC P	2	50	33	56	41	13
ASST PR	2	51	38	54	21	12
LEC	2	81	29	46	21	14
PUBNPHD						
PR	3	65	19	53	38	18
ASC P	3	66	20	53	27	17
ASST PR	3	71	19	52	14	18
LEC	2	87	17	45	16	18

Several times, after I spoke at these klatches, I looked around the table. Sixteen versions of the “Scream”—Chicana, Latino, Anglo, African-American, Filipino—looked back. I turned toward the president. Her hands covered her ears, her mouth was open. What had I done?

I likened the university to a business, thinking of Veblen and Parsons. They argued that transacting, admitting, and hiring for an institution as large and as diversified as an American university required, as a “necessary evil,” “scholastic accountancy” and rational procedures. These processes acquired legitimacy by mimicking the exacting observation and impersonal theorems that advanced the industrial arts and sciences (Higher, 2-4, 220-23; Parsons, 135-37). Veblen and Parsons regretted that the complexity of modern business transactions and intellectual absorption of the faculty combined to open the way for academic administration to expand. At the coffees, many faculty were not interested in such historical irony. Ledger and policy were evil. The argument was essentially metaphysical. Unchecked, business practices would supplant the soul of the university; it would become a “knowledge factory” in which training displaced learning (Aronowitz, 158; see Newfield, 128-41).

AGE OF ANXIETY: THE HIGHER (L)EARNING

Is learning today only about earning tomorrow?

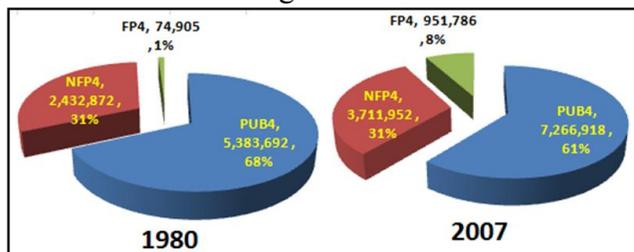
Many faculty believe in the gospel of higher education, much as external critics preach that “what business wants” from higher education are legions of symbolic analysts (Oblinger, v-vii, 4-11, 24-28). A mystery envelops knowledge, teacher, and learning, these faculty believe. This mystery can neither be meted out in coin nor dissected by neuroscience.

Here is an essential paradox. Post-modernists preach that truth is constructed, with power in play. But members of the post-modern university still resent when critics view teaching as business or politics, not mystery. Now and then we in universities should see ourselves as other see us. We pursue, if never grasp, truth. We also dance with unions and sulk over salaries.

These days, resentment of business suffuses analyses of research universities and community colleges from within these institutions. Entrepreneurialism and vocationalism have hijacked their missions, critics say. (For example, see Noble, Digital; Kirp, Shakespeare; Engell, Saving; Slaughter, Academic Capitalism; Aronowitz, Knowledge Factory; Kerr, Uses; Bok, Universities). Comprehensive universities have not crossed the Styx, yet. The faculty’s research is not in the pocket of the biomedical industry, as can be the case in large research universities (Bok, Universities, Ch., 4 and 8). And the undergraduate curriculum in comprehensives still elevates critical thinking in the arts, humanities, social sciences, and sciences over the application of technical skills in craft and vocation.

Facing rolling budget crises and skeptical policymakers, however, some faculty and administrators day-dream about a new comprehensive university. What if we changed the business model of the university? What if we let go professors and hired “content makers”? What if we abandoned space and went on line? What if we converted requirements into shopping carts? (Levine, “Soul”.) Ironically, few day-dreamers know that John Sperling left the mother ship of public comprehensives, the CSU, and founded the University of Phoenix after fights with CSU managers about new formats for adult education (Schrage, 2-3).

Is “what if” becoming “what is?” Over three decades, FP4s have won away 10% of the



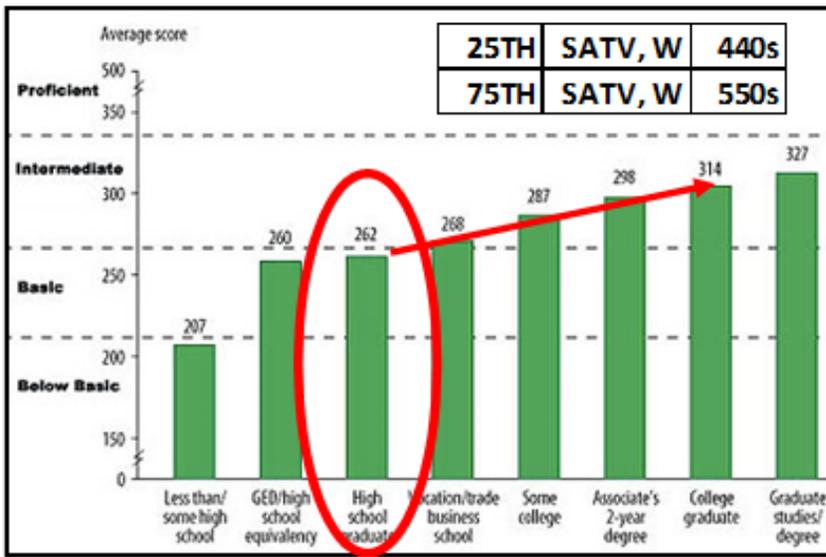
enrollment size at PUB4s (IPEDS, Group). Generally, they match student-faculty ratios, but widen money margins by limiting physical assets (bye, bye quad) and unbundling the tenured professor into a series of part-time content-providers, course

designers, presentation consultants, and teachers who follow others’ script (Rhoades and Slaughter, 2-6).

The for-profit has been filling niche needs in cities, for more than a century (Ruch, 47-49; Kinser, 2-3), without toppling public higher education. However, the instability of state funding because of the expanded responsibility for the public welfare yet intolerance for raising revenue has made public universities vulnerable (For elaboration on the clash of responsibility and rights, see Bell, “Afterwards: 1996”). And then globalization and post-industrialization have quickened the volatility of careers and thereby undermined the utility of one extended preparation before careers begin.

In sum, capital swiftly shifts regions to exploit advantages in education and labor and to penetrate new markets (Galbraith, New, 299-01; 351-54). As a result, public universities hold portfolios of majors and general requirements that, while symbolic of the “good” and the enduring, do not prepare students for these new conditions. A century ago, Henry Adams wrote that the mind craves as image for its yearnings and fears (Education, 489). To the public university, the for-profit is the alien, the predator in the pipes; it seeks out the vulnerable, reconstitutes them from within, and then bursts the academic body with a new mission and faculty for a new world.

Such anxiety without (yet) adequate reaction originates in the location of the post-WWII intellectuals in the public university. According to Edward Said, they have enjoyed the luxury of



a nearly inviolate sinecure but distrusted the source--wealth or state—and resented the conformity that it required (17-23). Acceptance of a position in a university commits an intellectual to the reproduction of learners. These learners must satisfy, at minimum, a common standard that serves both professional and civic functions.

However, university intellectuals identify more with what they read than where they work and what functions their workplace serves. This conflict is especially sharp at public comprehensives. Daily, commitment to scholarship clashes with the time and stamina required to help the high school graduates progress on the journey to literacy (http://nces.ed.gov/naal/kf_dem_edu.asp; and note the verbal and writing SATs for PUB4NPHD).

University teachers see themselves as the skeptic, agnostic, and free speech advocate; they see themselves as the avant-garde that mocks systems and defrocks institutions. They—I mean, we—cannot stomach the partial comparisons with business, customers, and markets because we cannot digest that we already are in the belly of the beast.

Certainly, the Bureau of Labor Statistics understands that higher education is a business. It projects growth of over 23%-- 380,000--in teaching positions in universities through 2016 (http://www.bls.gov/OCO/ocos066.htm#projections_data). One can view university products mainly as certificates that legitimate further training and/or advanced employment. On that view, higher education functions as a complex exchange (right), employing 2% of the workforce and instructing 10x as many people in a lifetime pursuit of certificates and degrees. The public comprehensive holds a 12% share; it focuses on fixed-time degrees—its major product line, the BA, requiring four full-time years, \$25,000 in tuition, and \$10,000 in supplies. In this exchange, more than \$1,000,000,000, 000 buy chances to learn, places to live, and means to gain certification. Linked to K-12, higher education becomes part of a super-segment of perhaps \$2,000,000,000,000 in direct expenses.

2006-07 IPEDS AND 2009 BUR. OF EC. ANALYSIS			
	HIGHER ED	PUB COMP	
12 MO HC	25,756,546	3,077,001	12%
12 MO FIE	16,075,057	2,132,273	13%
AGE 25-64	6,200,000	732,777	12%
HC WRKER	3,080,404	273,042	9%
FIE WRKER	2,690,035	329,444	12%
TU+FEES	108,654,801,154	9,695,162,973	9%
BK SUPP	24,112,585,500	3,624,864,100	15%
LIVING	128,600,456,000	19,190,457,000	15%
REVENUE	475,419,456,693	36,062,974,933	8%
FED GR AID	15,708,683,713	2,043,880,649	13%
ST GR AID	6,630,942,845	1,240,909,809	19%
GRANTS	48,794,317,950	2,770,031,532	6%
LOANS	131,840,276,378	260,000,000	0%
TH w/ LN	6,016,614	3,242,752	54%
ENDOW	413,668,155,604	6,431,162,780	2%
ASSEIS	1,047,596,304,285	54,293,720,157	5%
EXPENSES	383,000,000,000	33,500,000,000	9%
WAGE	250,000,000,000	15,500,000,000	6%
BEN	70,000,000,000	4,900,000,000	7%
WORKER	2.39%	0.21%	
K-12 EXP	493,000,000,000		

Money-managers are lured by the volume and implications of such transactions. They can borrow against, invest, or cash out huge assets, as the chart suggests. Especially at research universities, one can capitalize research and occasionally have a massive return. The figures for books and supplies—in total and for public comprehensives—capture the attention of the information industry since their total annual sales of \$25,000,000,000 depends on nearly \$5,000,000,000 (http://www.publishers.org/main/IndustryStats/indStats_02.htm; <http://www.textbookfacts.org/fa/#three>) in textbook sales. Yet the constancy and volume of demand are undercut by the authority of professors to order texts and thereby increase relative costs by spreading sales over competing texts. Of course, digital technology reduces the cost in raw material and supply chain. At the same time, it can diminish sales by enabling user reproduction, and it can re-center the industry on those providers of technology with adequate margin to bundle access to e-texts (<http://www.textbookfacts.org/fa/#one>).

Beyond functioning as a site for the reproduction of knowledge, the university itself functions as both consumable and investment. Talk about “rushing fraternities” as a questionable introduction to college life? On average, undergraduates own two credit cards; they run balances of \$2,500, piling on interest that eclipses any reasonable expectation of return on investment. The purchase must provide much of its own gratification. For example, by 2007, students in the bottom third

economic stratum in public comprehensives ended college with over \$14,000 in debt. Debt accelerated two times faster than inflation since 1986. The amount of debt was similar across strata

Such is a primary lesson in college. Students begin owing credit. They also experience college as a credit instrument. Some money down and some to be paid later with interest buy access to information and certification. According to the implied cultural contract, the purchase promises a lifestyle of upward mobility. In turn, upward mobility requires periodic investment beyond current means but upon faith of greater return (Roberts and Jones, 214-16).

Net cost and protracted debt grew over the decades in which Blacks, Hispanics, and American Indians entered the public comprehensive in large numbers. Exclusive schools moderated this effect with grant aid targeted to affirmative action.

But federal and state grants declined as a proportion of aid, Since endowments per FTES at public comprehensives were no match for resources in the private and public research sectors, institutional grants could not make up the difference.

DRAWN FROM IPEDS PEERS, 2007	% INSTITUT. GRANTS	ENDOW PER FTES
NON-PROFIT 4 YR+	44	\$ 129,000
PUBLIC PHD	35	\$ 17,776
PUBLIC MA	18	\$ 3,463.00

Thus, understanding the university requires that we see that money is paramount to its operation. Silver does not clink in the corridors. But this silence is not evidence of expulsion of the fund managers. Rather, the dollars have been virtualized—from coin to paper to byte—so that transaction is no longer a spectacle. We seem to be living out Henry Adams’s rule of phases (Samuels, 410-12). The University of Phoenix haunted us because it exposed knowledge as transaction. Google University represents the next phase. A succession of financial and scientific inventions immaterializes social transactions and reduces the need for citizens to be physically present to one another. Can the spirit of republicanism survive when the body politic becomes a ghost?

THE CALCULUS OF COST

How much does a degree really cost? And who really pays?

Few people inside the university and certainly most people outside have any knowledge of university types and their finances. This obscurity breeds distrust. However, knowledge does not restore faith. The temples of reason are funded in complex ways that indicate, and question, the good that they serve. The next sections link sources of funds to functions. Periodically, I broaden the analysis to suggest who gains and loses in the arrangement. Comparisons of types expose this tally.

Researchers have shown that over the

2007-08	IPEDS	AV LOAD	SFR	FIEF	% NON TT	FTSAL AV	PTSAL AV	FIE	UG TUIT	TUIT/FIES
COMP, PUB		12.3	19.0	313	51%	62,000	\$ 10,690	6,000	\$ 5,456	\$ 4,262
RD, PUB		13.1	13.0	1484	44%	76,400	\$ 18,000	19,800	\$ 6,633	\$ 6,740

last twenty years costs in higher education have skyrocketed, well beyond inflation. But the core cost of teaching in public comprehensives has not escalated in constant dollars because part-timers have increased as have section sizes (derived from IPEDS and NSOPF). When we tease out the data, especially on the status and cost of faculty as well as on workload, we see that public RDs run at nearly 2x the expense of public comprehensives. Of course, higher tuitions partly offset the cost at the research universities. Also, the public RDs compensate for lower student-faculty ratios by generating more income from grants and contracts, on average. That difference, though, is balanced by substantially greater expense in research; it does not reduce the bottom line for undergraduate instruction.

Inevitably, discussions about higher education focus on subsidization by the state. But true costs are obscured by both mythology and marketing. On the one hand, the public ignores that 20% of the economy is subsidized (<http://subsidyscope.com/media/pdf/Subsidyscope%20Framing%20Paper.pdf>.) On the other hand, university administrators often raise price for prestige. They expect, like a car dealer, to peel off the sticker price by packaging grants, discounts, and loans. According to the College Board's Tuition Discounting in '09, public comprehensives charged tuition near \$6,000—close to the level of the overt state appropriation. But total tuition was offset 50-75% by other government sources, including Pell grants, state and institutional grants, and outright discounts (http://www.collegeboard.com/prod_downloads/press/tuition-discounting.pdf). It is not satisfying to conclude that higher education like other major commodities is bargained and subsidized speculatively, based on a peel away price that speculates on bargaining and subsidizing.

As a result, non-state revenue is both less and more than it seems. Less—government aid buys down tuition; more—universities rely on gifts, sales, and investments (entrepreneurialism and philanthropy) to reduce direct costs to students and the state. The financial balance depends largely on the total amount of tuition and state subsidy levied for each full-time equivalent student. An FTES consists of fifteen semester credit hours; and the average cost for the support of a full-time equivalent faculty consists of a multiple—the student-faculty ratio—of the FTES. Typically the legislature sets capacity and subsidy for public comprehensives after consulting with academic governance. These decisions start but do not end with systematic forecasting of economic trends, both income and taxes; they also require projections of high school graduation rates and, from that, college-going rates.

The process for setting budgets and targets is easy to follow if we use illustrations (See Brewer and Kaganoff for an overview). In California, as in most states, a Master Plan governs the allocation of resources to three tiers of higher education (Bastedo and Gumport, 2-3). The top 12% of high school graduates are reserved spots in the UC, the top 33% in the CSU, and the rest of the 60% of high school graduates who are predicted to attend college, attend the community colleges (<http://www.ucop.edu/acadinit/mastplan/MasterPlan1960.pdf>, 4). Other algorithms forecast transfer among the tiers.

Regularly, both the legislative analyst and the demographic unit in the Department of Finance update enrollment projections. These projections often outstrip the anticipated resources of the state. After all, taxes for the general fund must support a growing list of expenditures in the states for transportation, criminal justice, health, welfare, K-12, recreation, and physical infrastructure (McKeowan-Moak, 1-2). Gradually, as enrollment builds, the systems require more buildings and campuses. Usually, funding for large capital projects draws on voter-approved bonds since the general fund is not sufficient to support extraordinary needs.

Hence, several forces distend the systems by bending the formulas. Guardians of the state budget sometimes attach a discount rate to funding or under-predict enrollment in order to limit the state’s immediate obligation and to forestall the call on bonds for additional facilities. Meanwhile employees and advocates of advising and technology, for example, lobby for more resources for a unit of cost—the full-time equivalent student. Then each year, external forces like the supply and demand for library journals, health care, and fuel affect components of cost, either driving the entire sum (usually up!) or requiring a recalibration of funds available for other categories.

But let us assume what rarely occurs. Sufficient funding becomes available to disinterested legislators to cooperate with high-minded trustees and administrators in order to fund the university appropriately. The following diagram explains how funding then works. The far left

COMPONENTS FOR MARGINAL COST	1 FTES: SFR x FTES = 1 FTEF					MRGNL COST		NOT IN MARGINAL COST
	FAC AV SAL	BEN	AC SUP	STSERV	INST SUP	TUIT	STATE	
	CATS PROPORTIONAL TO CURRENT TIL COST					GENERATED REGARDLESS OF TARGET	NOT GENERATED WHEN ABOVE TRGT	
LEVEL ld ud gr	WEIGHTED					GENERATED REGARDLESS OF TARGET	NOT GENERATED WHEN ABOVE TRGT	AID, PHYS PL, CAPITAL PROJECTS...
MODE lec sem lab, dir	UNWEIGHTED							
PROG market demand						DISCOUNT		
FLAT no differences								

columns indicate whether allocations will be weighted. That is, will the funds come with small print that links proportions to levels, modes, and programs? The level of lower-division instruction for undergraduates historically costs less than graduate instruction. Graduate instruction can use expensive equipment and require one-on-one conferences with professors. Or funding might be weighted to account for modes, like lecture, seminar, studio, lab, and directed study, depending on historical patterns and changes in the disciplines. Obviously high cost in lab courses must be balanced by low cost somewhere else. Or, funders can support some disciplines at higher rates than others. For example, the market drives up the cost of hiring professors in banking, or pedagogy seems to dictate restrictions on class size due to assigned work, access to equipment, and accreditation requirements.

The middle categories parcel funding into categories of expense that, as I just implied, can be weighted. The top line states the premise. Budget people determine the overall average cost of instruction. They look at historical trends and account for new tendencies in the cost of an average faculty hire. That cost is supplemented by the call on immediate direct expenses—benefits, office and library support, assistance for advising students, etc. The total cost for supporting an FTEF then is divided by an SFR to arrive at cost per FTES. In turn, that cost is divided into tuition and state subsidy. Systems must decide whether tuition should vary by

program, level, and mode; if not, then they endorse hidden subsidies whereby excess funds for low-cost majors are transferred to support high-cost ones.

1 COMPONENTS		
	COST	SHARE
INSTRUCTION	72,000	45%
SAL	50,000	
BEN	14,000	
SUPPORT	8,000	
RESEARCH	5,300	3%
AC SUPPORT	17,000	11%
STU SERV	15,800	10%
INSTSUPPORT	23,500	14%
PUBLIC SERV	6,800	4%
OPS	19,600	12%
DIRECT OPER	160,000	100%
2 ALLOCATED TO FTES BY SFR		
SFR	18	
MARGINAL	8,889	
STATE	4,889	55%
TUITION	4,000	45%
3 EXAMPLE OF FUNDING, DISTRIBUTION		
50 POS/900 FTE	8,000,000	
LAB, STUDIO	25 AT 16/1	
LECT, SEM	25/AT 20/1	
OR		
BUS AND ENG	25 AT 9889	
HUM	20 AT 7889	
HEALTH	2 AT 9389	
PSYC	3 AT 8556	

The next chart models a set of allocations. Clearly, instruction is the largest item. Even so, it is less than 50% of the basic operating cost. The SFR distributes the marginal cost across a standard number of FTES. From that policymakers set tuition. The chart, however, shows tuition differently than how it is paid. Universities vary actual tuition in many ways—by level, program, number of credits, and resident/non-resident, for example. An allocation to a university consists of average tuition x FTES, where average tuition reflects average marginal cost. The mauve boxes show several ways in which the allocation to the university can be packaged for departments and universities. Remember, marginal cost excludes capital projects above a fixed cost like \$100,000; and it does not include non-operating funds like the bookstore and parking. Because it is an average that has been manipulated to reflect market conditions for new hires, it neither captures the lower salaries of part-timers, nor records the raises that accrue over time.

An economics of inputs and consumption thus drives the curricular decisions of both local administrators and students. (See McLendon, Hearn, Deaton, “Called to Account,” for a

NSOPF EXTRICATION, '03-04: RELATIVE EXPENSEE	more part-time	more temp fac	plus/minus av sal	greater sal	costlier instruct	greater ttl cost
Political science	-4.00%	-26.98%	-6.38%	4.38%	-3.10%	-5.71%
Communications	-25.14%	5.35%	-0.48%	3.82%	-4.66%	-5.26%
onally specific programs	5.71%	27.67%	-13.97%	0.45%	-3.55%	-4.09%
Nursing	-48.57%	-4.65%	6.22%	2.69%	2.18%	-2.81%
Economics	-12.00%	-18.60%	14.46%	-0.11%	2.78%	-2.03%
Other health sciences	17.43%	29.30%	-15.39%	-0.67%	-1.27%	-1.41%
History	-20.86%	-42.79%	9.16%	-0.11%	-2.40%	-1.40%
Business	-20.57%	-17.67%	30.51%	0.45%	-3.30%	-1.29%
Psychology	10.57%	3.49%	-0.77%	-1.23%	-2.39%	-1.00%
Computer sciences	-18.00%	3.49%	11.21%	2.13%	-1.60%	-0.75%
Philosophy and religion	12.00%	21.40%	-2.23%	1.57%	2.48%	-0.70%
Teacher education	31.14%	10.93%	-20.59%	2.69%	0.48%	-0.28%
ire and home economics	4.00%	27.44%	-2.64%	4.94%	-4.07%	-0.08%
Other education	38.00%	30.00%	-11.96%	-1.23%	-0.49%	0.07%
Fine arts	41.43%	22.33%	-28.80%	-1.80%	0.50%	0.28%
English and literature	26.86%	14.65%	-15.13%	-2.36%	-0.06%	0.42%
Foreign languages	3.43%	-7.67%	0.09%	-5.72%	-0.24%	1.22%
Mathematics	6.00%	6.51%	-10.53%	-0.11%	3.67%	1.59%
Physical sciences	-19.14%	-20.47%	12.88%	-0.11%	2.13%	1.64%
Other social sciences	-17.43%	-22.56%	16.57%	-0.11%	-0.35%	2.54%
Biological sciences	-24.00%	-27.44%	8.33%	-1.80%	-0.46%	3.29%
Sociology	26.86%	0.23%	-10.76%	-7.41%	6.30%	3.64%
All other programs	-29.71%	-8.14%	11.70%	-5.16%	4.45%	5.87%
Engineering	-23.43%	-6.28%	21.15%	4.38%	3.00%	6.22%

thorough review of trends in performance funding.) To afford expensive programs in the sciences and engineering, prudent administrators encourage faculty to compensate with less expensive majors in business and the social sciences. Meanwhile students favor fields that appear to lead to white collar careers. They shy from technically complex fields in the sciences, in part, because the path is cluttered with expensive texts and requires more study after the undergraduate degree,

increasing debt and delaying career. Academic money-changers in the administration must be clever enough to link enrollment growth to the different costs of academic programs. It seems distasteful to limit access to kinds of knowledge because of cost; but such is the world. Rationing admits and hires, imposing quotas on student majors, limiting the number of expensive mode classes, and patrolling class sizes are tools for balancing.

AUXILIARIES AND SPONSORED PROGRAMS: CAN THEY SPARE A DIME?

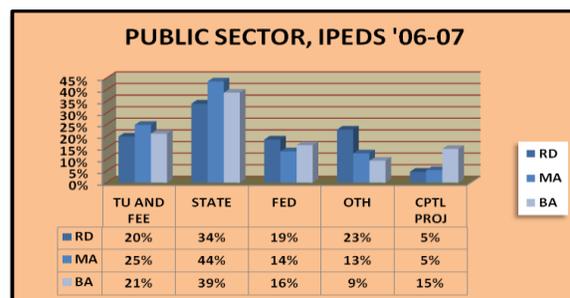
Why does the book store sell t-shirts? Who profits?

Now and then the money antics of someone in a public comprehensive university makes news. But because the budget is so close to margin, rarely does someone get caught for spending too much on flowers for the president's yacht. Nonetheless, the campuses do spin-off agencies and corporations to offload costs and generate dollars. Running food services and bookstores--or subleasing them—a university enters commerce to conserve the general fund for education. The spin-off generates revenues from sales that cover its costs, save for investment in the business, and return a dividend to the university.

Often, university members berate such commercialism. Meanwhile they fantasize about the caramel tinged foam that cinches the full-bodied espresso at the convenient “Latte on the Lawn.” They become more irate, though, the closer filthy lucre gets to teaching/learning and research. Continuing education is a common venue for career-related learning at public comprehensives (and the post-secondary tier in general). Mediating between knowledge and market, the division underwrites professors, some of whom work at the university in traditional degree programs, to adapt what they know to certificates and training that the changeling economy whispers to workers that they need. The outfit typically operates on higher fees but lower—if any—state appropriation. This business model requires sudden and frequent creation and destruction of curriculum that anticipate the market.

Yet these programs do not get much respect on campuses. Rarely are they full degrees taught by resident full-time faculty to full-time students avid for the knowledge of permanent principles. Shunted to the dark alleys of summer and winter terms, late nights and Sabbath mornings, stranded classrooms along unkempt halls, and mini-malls here and there, continuing education effectively rents space and pays the host university fees for bureaucratic services. However, in 2004-05, the Adult Education Survey tallied that of the 47% of adults who pursued education past high school, nearly 25% experienced college, but over 50% took continuing professional study. Higher education's modest share, 15%, did not lag far behind the pursuit of the BA and BS (<http://nces.ed.gov/surveys/ctes/tables/index.asp?LEVEL=ADULT>). As jobs morph and retirements retract, the prospects for continuing education become lustrous.

Start-up incubators and centers for the transfer of knowledge to the private sector adapt self-funding, too. Because of the reliance on primary research, they are rare on public comprehensives. Acting as match-makers, visionaries link university facilities and researchers with grant-writers, entrepreneurs, and angels. Their incorporation shelters the general funds of the university from risk while it advances the R&D of products that tantalize with vast return. By law, self-supported entities must reimburse the campus for the use of campus resources.



The best way to see the relative impact of revenues other than tuition/fees and direct state appropriation for enrollment is to focus on funds by broad source. They include tuition; state funds whether appropriation, allocation, or grant; federal funds without regard to category; enterprise earnings and gifts; and sums dedicated to capital—building projects. (See the previous chart.) These facts set the contexts for the proportions. Research universities' budgets are several times larger than the budgets at comprehensives. In turn, comprehensives at least double the budgets at baccalaureates. 60% of the state column consists of the annual appropriation. Most of the federal column, like the rest in the state one, reflects grants to students, researchers, and special projects that enrapture influential people with access and lobbyists. Tuition plus the appropriation in the state cover instruction, support, student services, and physical as well as virtual and logistical operations.

The comparisons startle. Tuition accounts only for 20 to 25%, while all state funds—when combined with capital projects that are funded largely by the state—just top over 50%. So, as the chief academic officer, one wonders why the buck from these other sources does not stop in your office often enough. Marginal cost formulas are rarely prescriptive. But, they are inadequate to the task of repairing and replacing the layers of technology that predate the latest cycle; and, obviously they cannot redress unfunded mandates. So, one scans the columns for unrestricted funds in excess of the money that is generated by services, stores, and entertainment and that is neither required to pay down commercial debt of the enterprise nor invested against the future of the business.

Under the state and federal columns, excluding the basic appropriation to the university, such unrestricted funds derive mainly from the general overhead (indirect) on the direct expenses in grants and contracts (Indirect Cost, <http://www.ed.gov/about/offices/list/ocfo/intro.html>). In theory, depending on formulas of the grantor and practices in the university, this reimburses the operations of the university for water, power, and other provisions too basic to be enumerated (Phelps and Flood, 1-8). Additionally, administrators identify the procedural cost of management such as postage and hiring. These amounts are considerably less than a percent of the university budget. Still this overhead provides flexibility, to the extent that it reduces *pro rata* costs (Primer, <http://www.research.psu.edu/osp/PSU/Proposal/indirect.htm>). Principles for allocating expenses to the indirect rate of cost sharing appear in OMB Circular A-21 (<http://www.whitehouse.gov/omb/rewrite/circulars/a021/a021.html>). The indirect rate memorializes the agreement of the agency with the university about the composition of this charge. Indirect components divided by the direct charges to the project yield the indirect rate.

The “other” revenue column—for services, enterprises, and giving—is consumed mainly by related expenses. Also, many gift instruments and revenue from fees restrict expenditures to the purposes of the fund (Keating and Franklin, 16, 29). Accounting principles generally do not boost converting the revenue source for one service into an unconstrained profit center for another. So, once these expenses and limits are combined with charges for university facilities and utilities, the unrestricted return might amount to 1 to 2% of the comprehensive university budget. The university as a whole, therefore, does not fatten on “tribute” from these activities. Rather, passion and dedicated revenues decentralize mission and support; they nurture activities aligned but not necessarily coincident with the purposes that are underwritten by tuition and state appropriation for enrollment.

The teacher of the over-subscribed lecture class, whose budget for printing just was cut, feels like the sea passenger dying of thirst. She knows that the university is afloat on money. Nearly 55% of it flows past her. It is not potable for teaching due to restrictions on grants, rules against diverting funds from user fees, and statutes that prohibit the mixing of general and capital funds. In this sense, the much vaunted transparency of the budget, even when un-encrypted in footnotes, frustrates the passenger.

Even small gains for unrestricted use are useful. Faculty, staff, and students often want a university to build housing, childcare, a gym, a preventative care clinic for the community, and more. But where is the money? A corporation that is chartered to support the university uses part of an unrestricted reserve to secure a loan for capitalizing the project. If the university already owns the land, the cost is much less. The capacity of the corporation for debt limits the project, as does the estimated return from fees for the projected services. Obviously, pricing multiplied by users over time helps to forecast a schedule for the paying down of debt; also, it helps to determine the size of the original obligation. Over time, the project establishes a flow of revenue to the university, while it performs a service.

Citizens of the university often resent that these extra services do not give big discounts to the campus. But suppose that the university actualizes the students' claim of entitlement to scant tuition, And what if it accepted the workers' argument that a non-profit university should act like a charity? And could it accept the policymaker's belief that certain mandates are too important to trivialize with funding, without harm? Were the university to shrug and accept the basic confusion of non-profit with no profit at all, then it would etherealize into utopia, flawed only by its non-existence.

The people's university enrolls the people, not just the wealthy. High tuition is not an option. But the people's university cannot convince the people that the ventures of tomorrow, which higher education presages, require support on par with funding for the vigilance of today, which personnel in the justice system practice. A surge followed by an upward trend in state appropriation is not likely. Its research capacity is decapitated by prohibitions against offering the PhD. It has not and likely will not amass large endowments and the succession of grants and contracts that sustain advanced labs.

IPEDS 06-07	PUBPHD	PRIPHD	PUBMA
AV R&D	164,499,314	120,245,793	18,659,346
AV END	414,500,000	404,000,000	24,112,000

Endowments at research universities average twenty times the endowments at public MAs. Before markets tumbled in 2008-09, Harvard topped the list at \$35,000,000,000. The leading

public MA, San Luis Obispo, ranked nearly 260th at \$187,000,000. Average grants and contracts record a spread of six to eight times. If we deem San Diego State, which is Carnegie-classified as research-intensive, a public MA by blood line and family, then at rank 60 it stands a lonely sentinel among universities without hospitals that compete for research grants (NSF, Data Table 33, 2007). Of course, all the federally funded R&D centers at universities were at research universities (NSF, Appendix B: Centers: 2007). And in '06-07, private grantors distributed over \$5,000,000,000 through 7,100 awards. 35% of these funds and 43% of the awards went to research universities. A public MA was not on the list (FC-Stats, Grant Maker at Foundation Center, http://www.foundationcenter.org/findfunders/statistics/gm_growth.html).

All this matters because endowments enable students who lack money to go to college without going into hock. Unless public comprehensives improve their competitiveness in grants and contracts, the gap between experiencing the tools of big science in research universities and hearing about them second hand in other schools will grow. Even if the run-off in unrestricted funds is slight, it can nourish innovation that otherwise would go wanting. We can expect though that universities and colleges that draw heavily on endowments, entrepreneurship, and external funders will flood the moats, crank up the drawbridges, and load pestilential carcasses onto the catapults. They will protect their bounty. After all, the “res publica” is a quaint metaphor.

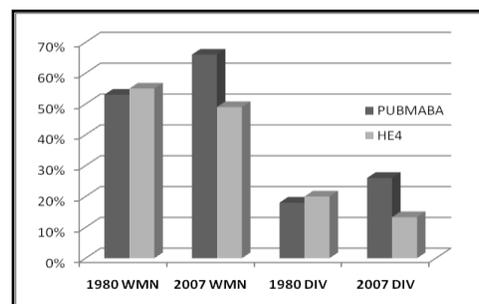
EDUCATING THE PEOPLE

What distinguishes the teaching mission of public comprehensives?

They provide diverse and often marginally prepared populations access to higher learning and advancement. They have outpaced diversity among four-year schools. Beginning in the late ‘60s, higher education opened widely to women and minorities (“Fast Facts,”

<http://nces.ed.gov/fastfacts/display.asp?id=98>).

But decreases in the proportion of grants in aid, increases in tuition, and reversals in affirmative action have ended the trend. (See *The States and Public*, ed. Heller, for overviews.) Between 1980 and 2007 (right) four-year publics, excluding public comprehensives, saw declines in the combined percents of women and of Blacks, Hispanics, and American indigenous peoples (IPEDS, 2007). Public comprehensives, though, continued to trend up.



Metro location, transfer equivalence, and a culture that views failing as recoverable bankruptcy are among the essential characteristics of public comprehensive universities. In fact, the genius of this part of the American system rests, in part, on redundancy and remediation. Working adults, refugees, wearied parents, and second-start grandparents swell the ranks of part-time students and push back graduation rates. Access, in other words, converts to demerits, when we invoke the benchmark four-year graduation rates of residential colleges. The economic differences of students in public comprehensives are subtle but persistent. According to 2009 NAPSAS data, 51% of undergraduates at non-profits universities and 42% at public ones come from families with income equivalent to \$80,000 or more annually. 22% and 29% respectively come from families under the equivalent of \$40,000 annually. Public comprehensives show 35% under \$40,000 and 31% beyond the \$80,000 mark. The spectrum of wealth shifts down.

Today many people wonder whether access has gone too far. Since the latest era of tax revolts began in the late 1970s, state leaders have been trying to cope with insufficient general funds. Swelling social and medical costs for both aging boomers and Emma Lazarus’s tired and poor, voter mandates to lock up repeat offenders, surges in the identification of K-12 students with troubling needs, rising fuel prices, crumbling bridges and turnpikes, and countless federal mandates have left public funders few choices. They rationalize higher education as a private good that buyers should pay for. Faculty believe, no doubt as many always have, that students are unprepared for college and not sufficiently focused when there. In the middle are the majority

of students; most are non-traditional. As fees rise, they work more; the faculty lament lost focus. Further, the past is prologue for many students. High school did not challenge them to study long hours. Despite intentions to be more focused on study in college, over 25% do not return by year two.

The students, no matter the tier and sector, are ambivalent about college as a retreat. Across four-year higher education, students who attend full-time without working still form the plurality. College is still the classic “psychosocial moratorium” (Erikson). Or is it? Three times as many student work, as not, in four-year publics.

Subtle differences further distinguish the public comprehensives from this classic model. A higher percentage of students over thirty attend them. The students are more diverse. Levels of parental education, wealth and access to a challenging high school vary by Carnegie type (20). This linkage is not causal; there are exceptions. Two implications are well-studied: faster time to degree and higher degree completion for students in residential colleges and research universities. Overlooked, however, is another measure, persistence. The rate of transfer is 50% higher for students whose first four-year university is a public comprehensive. For these students, if they work, the moratorium is both perforated and interrupted.

Some students work to accrue “stuff” prematurely. The acceleration of tuition at public comprehensives since the late ‘80s has required more work, too. Still neither consumerism nor niggardliness is responsible for frustrating the vision of free higher education. That vision came with fine print, as in the 1960 California Master Plan. The fine print implied that higher education bolstered the nation state by preparing the professional and office workers who could engineer wealth and security, thereby making sure that the 1930s and 1940s did not repeat. The regime of applied knowledge was meritocratic. Academic performance was the ticket to college and within it, to upper-division work. The system controlled cost by driving many students to community colleges and reserving enriched support for a select few at state and research-intensive universities.

Civil rights and student protest challenged meritocracy in the 1960s and 1970s. Seemingly neutral tools like the SAT, once viewed as eliminating favoritism by testing for merit, were questioned. These tools could not make up for inequalities in preparation. As a result, special admissions and acceptance that was conditioned upon remediation would bridge racial divides. Such democratization of opportunity, though, required more general funding just as health care, welfare, and pensions spiked in state budgets in the middle and late ‘60s. Then, after the urban unrest in the late ‘60s and early ‘70s, tough penalties for recidivism, mandatory sentencing, and the broadening of criminal classifications increased costs in criminal justice.

So, three conceptions of the good, postsecondary, paternalist, and protectionist, competed for support at the beginning of the tax revolt era that Proposition 13 symbolized in 1979. Higher education held its share during this contest. But loans partly replaced grants for students, as states struggled to support three goods and as the rising cost of fringe benefits within universities drove up tuition and limited the source for institutional grants for students. Today we want the free tuition of the postsecondary meritocracy, the wide access under paternalism, and the security

yet low taxes of the protectionist state. We have forgotten that these values represent conflicting priorities for spending.

And yet we have achieved much of these three goods. In higher education we do not recognize how because we track costs institutionally, while most students experience costs as parts of larger transfer and financial systems. For example, 31% of students in public comprehensives have transferred after two years, usually at community college. In other words, nearly one-third of students pay for half a college degree at one-quarter of the average cost of the baccalaureate. Once transferred, 40% of eligible undergraduates receive grants. The vast majority of students from families under \$49,000 pay no tuition, while tuition discounts and institutional grants remove at least 30% of cost for students from families between \$49,000 and \$80,000. Those above can access tax credits to reduce cost. When we apply these insights to IPEDS data, we see that on average students pay 9% of the four-year listed price for a BA authorized by a public comprehensive university.

True, higher education is not tuition free any longer. To support greater access, cost has been tiered by academic level and adjusted to capacity to pay. Equity, more or less, enables equal opportunity. The process is invisible because it is dispersed across agencies with complementary goals but little coordination in setting tuition and then linking it to the elasticity of the individual components of grants in aid.

In a sense, higher education has followed two paths for diversifying. Research universities fixed on affirmative action. Admissions ascribed value to historically excluded race and gender. The value was limited so that the academic character of the student body remained largely the same. Public comprehensive devised broad exceptions. These exceptions held students harmless for poorer preparation in schools that effectively were segregated. Although public comprehensives faced some flak about opening standards and increasing public cost, the remedy did not inflame the public because exception/remediation applied to all comers. Affirmative action, however, challenged meritocracy by weighting the race and gender of individuals. The negative implication—denying access to qualified applicants—ignited in the courts. Over time, the courts became so demanding about the analytic burden that was required to justify affirmative action and to minimize harm that many universities dropped the approach. Exception/remediation has played out not in the courts but in the policy arenas where social benefits are weighed against public costs.

K-16

Where does high school end?

Even more so than other public four-year universities, comprehensives reluctantly function like high schools; this tendency is not recent. Robert Maynard Hutchins was disgusted by the debasement of higher education in general in the early twentieth century:

The college of liberal arts is partly high school, partly university, partly general, partly special. Frequently it looks like a teacher-training institution . . .

As a result, he proposed that higher education institutions begin after the sophomore year, leaving preparation to the equivalent of community colleges. But in the years before WWI and thereafter, American education was captured by anti-elitism that eventually paired the comprehensive high school with the comprehensive university. Both institutions accommodated student aiming for vocations as well as professions in a democratic academic gumbo.

Just before passage of the GI bill after WWII, nearly 50% of the population graduated high school, while only 5% went to college. Today nearly 90% have graduated high school, while one-third of them do college. But these high schools are overwhelmed by social diversity and under-supported due to tax revolts and the multiplication of state needs. Teachers and students suffer under the weight of large bureaucracies that impose textbooks and teaching strategies with little regard for clinical evidence or pedagogical needs in a building. Lawrence Cremin attributes this trauma to the structure of K12. Without a national curriculum and universal agreement on standards for teachers, districts reinvent the wheel. Diane Ravitch says that Dewey's mis-interpretations made bad situations worse by institutionalizing the belief that children, trailing clouds of glory, could construct much knowledge with little guidance. Fads were in, basics were out.

What goes around, comes around. Comprehensives prepare many K12 teachers and administrators. How ironic that the universities must provide the basic skills and finish the education in civics that the high schools bungled. Approximately 20% of freshmen in public universities and colleges take remedial work in math and English; many need help with reading since either English is their or their families' second language. Rates, however, are generally higher in comprehensives and can range as high as 40% to 50%, as in Louisiana and California. While universities define the threshold for remediation differently, students in comprehensives enter with consistently lower critical reading scores.

Research has shown that the need for remedial work, especially when combined with attending part time, is a warning sign for dropping out. Certainly colleges have developed programs and early warning systems to preempt this. It is rare for tenure track or tenured faculty to teach these classes. But the supervisors, staff, and part-time faculty have a research literature to call upon; and they "remediate" large numbers, raising continuation rates. Nonetheless, while the work is central to the mission of the comprehensive, its teachers occupy the periphery of their departments. As part-time or temporary faculty, they have marginal status.

TRANSFER

Who transfers, and what do they transfer?

Transfer students are eyed suspiciously even though state systems can afford mass higher education mainly because community colleges prepare students at the lower-division level at modest cost. Yet, since they are not a university's own freshmen, cured by its own courses, they are regarded often as interlopers. They carry credentials from a realm—the community college—that barely sustains intellectual sovereignty. In 2006, at least 30% of students in four-year public universities had transferred since 2003(NPSLS, '06).

The Carnegie unit of credit sets up a common currency for course work. Credits for a course depend on the number of “contact” hours of students with teacher each week of the semester. College-level credit for course credits depends on whether the outcomes, content, and methods have been approved by faculty in a program that an accrediting agency has accepted. This process does not stipulate rules for judging whether the content in different courses is equivalent. For that reason, acceptance of credit can be an *ad hoc* process. Both the records office and the relevant department have a say when a student transfers from a rare outpost. Information systems, which check courses against digitized archives, enable reviewers to make consistent decisions about transfers who traffic from familiar campuses. Automation followed on the heels of policymakers’ distrust of this case by case, university by university match. Like other states, California developed a core lower-division curriculum that, if a community college matched it, assured transfer. The process has been slowed, though, by glacial negotiations over which community college courses match the template. Florida ended jurisdictional jealousy by insisting on a common course numbering system across public universities that signified similar course content. Minnesota entered a brave new world; it also established a common calendar across tiers.

Transfer is a political irritant because it subordinates locally developed requirements to the specifications of other campuses. Very few academics argue that such limits violate an absolute right to academic freedom. But faculty who create a campus program in general education often are shocked to learn that it does not apply to a majority of students who transfer. Transfer patterns assign a higher value to mobility and exchange than to the vertical integration of lower-division courses with upper-division ones. Transfer systems effectively convert general education on a campus, however thematically coherent, into a distribution model. For example, a campus requires world literature for the humanities requirement; transfer agreements accept western literature as an equivalent, however. I guarantee that someone is “mad as hell.”

Faculty have more control over equivalencies to graduate courses. The assumption is as follows. Graduate instruction occurs mainly in seminars and labs. The scholarly identities of a small group of professors align into a distinctive interpretation of the discipline; they are like village potters, proud of their rustic work. Ah, but even here, there is more to the story. Because comprehensives focus on service to a region, many have grafted vocational and professional tracks onto the arts and sciences, as well as engineering and business. Professional organizations that bridge the academy and practice accredit curriculum according to standards. Conformity to standard of knowledge and practice reduce local sway.

ZUCKERMAN BOUND

If professors have academic freedom, why must there be so many rules?

Unlike the taboo-breaking academics of Lodge, Russo, Roth, and Bellow, flesh and blood faculty are rule-bound. Market, profession, and state girdle Gulliver. Professors who are critics of playing by the rules can get melodramatic. They gin up co-conspirators who aim to privatize research and commercialize the curriculum. Business, that rough beast, has left Wall Street and Main Street; it is slouching toward Campus Drive. However, rules and regulators constrain the order of things. They can prescribe the qualifications of instructors, the students to faculty ratio,

the adequacy of funding and support, the sequence of subjects, the appropriateness of methods, the criteria and evidence of student learning, and the proof that learning has contributed to social outcomes that align with professional expectations and the mission of the university.

Consider, as well, how the governance of comprehensives within the states limits autonomy. Individual campuses practice shared governance. (Academic Freedom, 2). Senates, not individual faculty, authorize curriculum and recommend on budget and policies. Local administrators oversee budget and policies and recommend on curriculum. Nonetheless, individual faculty have broad say in how and what to teach in a course. But transfer can erase this distinction, budgets can determine the class size, and scowling accreditors and growling colleagues can intimidate the content. Faculty, as professionals, do not sign in and out to a clock. But initiative is constrained, more so in non-unionized research/doctoral systems, by limits on overloads and, more so in unionized systems, by regimented salary schedules. This livelihood of the mind is both freeing and confining. If one faces down growls and scowls, one can speak boldly. But the ceiling on advancement, the toleration for mediocrity, and the walls that divide one's discipline from others' fields and from public relevance make for an invisible prison.

Campus autonomy is limited, too. Most comprehensives are linked horizontally, as in California. The tiers can be grouped vertically, as in Texas. These arrangements are pinned together by common functions: delivering budgets, setting internal policies for non-unionized employees and students, setting up and reporting on accountability measures, overseeing articulation between tiers, and managing data systems for employee and student records, as well as finances. The common functions vary by state. The purpose is the same: increase efficiency by processing volume centrally or according to centrally specified standards and procedures (Bowen and Braco, "State Systems.") In theory, accountability eliminates the need for the intervention of governors, legislators, and boards in other operations if the universities are accredited, meeting goals, and doing well fiscally. Yet intervene they do.

In effect, the mesh that envelops comprehensives is a mess of regulations punctuated by impulses. Rarely does governance beyond the campus use accountability results to determine budgets and priorities for these regulations (Burke, "Performance," 28-31; see Carey and Aldeman). On the budget side, unfunded mandates result from the misalignment of two functions, policy and budget making. Planning links the tiers to K-12 projections, and the states use BLS data on workforce outlooks. But governance does not adjust curricula systematically. Significant deference to the faculty's selection of curriculum still exists. In turn, institutional budgets and accrediting guidelines filter through disciplinary rivalries and personal differences to produce the chemistry of the program.

FACULTY, BORN AGAIN

Faculty are educated mainly as scholars who pursue knowledge. When working in a public comprehensive, though, they spend half as much time on research as peers in Ph.D. institutions. Accordingly, they produce far fewer publications—negotiable gem stones in the exchanges where faculty market themselves (NSOPF, '04-05). In comprehensives, most full-time faculty teach more than twelve hours each week; for each hour in class, they prepare, grade, and coach two to three hours outside class. In most Ph.D. granting schools, the faculty teach eight hours or

less. Total work hours tally to like amounts across tiers. And faculty spend time similarly on department matters like budget and schedule, campus governance and compliance with external rules. In comprehensives the vast majority of full-time faculty work in excess of fifty hours each week, teach nearly twice as many students as peers in research-oriented schools, and—like peers across academia—comply with a myriad of rules and regulators.

Comprehensive faculty find the teaching load heavy, if understandable given mission and dollars. However, they long for more time for scholarship and creative work. This yearning traces back, of course, to the privilege that the profession gives to publication. Echoing the California Master Plan (12), in Scholarship Reconsidered (16-27) Boyer called for reform in the definitions of faculty work in research universities. He wanted greater emphasis on teaching, service, and integrative scholarship. The definitions of success have been broadened in comprehensives' personnel policies. Mission, system, and funding have stamped the campuses irreversibly. But the culture—one's self-worth and estimation of others—sees the glass half-full still.

As a result, policies and practices for the review of professors hired on the tenure track are contradictory. Many faculty project the contradiction outward. They say that administrators hired them to teach but review them on scholarship. But most administrators are even more bound by rules than faculty who, by the way, direct the hiring. Believing that the advancement of knowledge among scholars trumps the advancement of learning among students, a professor can nullify the standard of review. However, a faculty's performance as a teacher, scholar, and colleague is reviewed by peers and administrators in the department, then the college, and finally the campus either each year or alternate year. Usually an institutional consensus, based on criteria that faculty previously approved, emerges from serial reviews. Typically a faculty is "junior" for up to six years. If tenured and promoted to associate, the professor undergoes more reviews to monitor, albeit with small consequence, lifelong productivity (<http://www.aaup.org/AAUP/pubsres/policydocs/contents/default.htm>).

Tenure, of course, insulates the holder's livelihood and position from retaliation. The holder can abandon tenure but cannot alienate it. In other words, tenure is like a house that is restricted to members of a gated community. For a time, they "own" the house but not the parcel beneath it. Tenure represents stability. It relieves the holder of job insecurity to do work that might not be profitable, to carry on for a long time, and to identify with alma mater. In the 1920s through 1950s, it fended off state censorship and political intimidation with security and stability to think and say at will (<http://www.aaup.org/AAUP/pubsres/policydocs/contents/default.htm>).

But tenure does not protect academic freedom from today's challenges. Frontier work in the sciences and social sciences often requires significant investments in research design and technology. Researchers therefore are beholden to the statist agendas of public funders and the secrecy of commercial competitors (Bok, Universities, 99-121; Rhoades and Slaughter, 12-16). The premium on peer-vetted publication in disciplines that are neither empirical nor technical has had unintended consequences (For example, see Galligan, "Politicization" and Lamont, "Peer"). Under the cover of professionalism adapting scientific review, it has corseted academic interests within high fashions of semantics, subjects, and methods that do not wear meaningfully in public. What Boyer pointed out still applies. We desperately need a scholarship of

connectedness that conveys through teaching and public essay the interplay of fact and value. Evaluators of such work must understand rhetoric, not just original research (Chan and Burton, "Vitality" 132-33; Boyer, Scholarship Reconsidered, 76-79).

Finally, the conversion of teaching positions to part-time status, of course, reflects the trend in the economy (American Academic, 5, 10; Rhoades and Slaughter, 16-18). Literally rooting out tenure without combating it, the move encourages caution in at-will employees who are anxious about frequent reviews by senior faculty and by students whom they must grade.

With or without tenure, comprehensive faculty and Ph.D. faculty who train them resist alignment with the mission. Undergraduates enter comprehensives in desperate need of learning how to write, speak, and read the disciplinary codes of academia. Full-time faculty, though, teach these courses infrequently. They argue about what should be in general education, category by category. But even when they (instead of part-time faculty) teach these courses for non-majors, they leave the task of relating the arts to the sciences to the students, except for perhaps the rare synthetic capstones. Let the students tie matters together. Integration is tendentious, the profession believes. Significance inheres in testing narrow hypotheses that contribute to the making or breaking of dominant theories.

That is why teaching and learning institutes within universities must work as more than retooling sheds, where faculty who really do not connect with students are advised to post a syllabus and follow it, imitate listening, make eye contact, drop the jargon, and project. And they must drop the ideology that the sage on the stage always is less effective than the guide on the side. Rather, they ought to treat pedagogy as a branch of rhetoric. As such, it cannot be ignored in favor of the subject since the subject does not exist independent of the symbols that represent it. They must build conversations on words, acts, and roles that compress, without leaving out, important details, and that explain publicly, without compromising meaning in the context of the discipline. They must help teachers fashion identities that integrate their roles as publicist, researcher, and manager. And they must cultivate habits of listening and assessing in instructors who too often dispense information without serious forethought about how they will know whether students know.

Finally, they must stimulate thinking about the status and function of knowledge in the discipline and general education. Student' remoteness from academic subjects and their struggle to differentiate skepticism in science from doubt in faith lead them early on to ask basic questions. Fumbling, defensive, or churlish responses can poison a classroom. Of course, faculty only should hire faculty who think about pedagogy this way. But graduate schools still offer limited teaching experience and rarely theorize it. Too often, when faculty hire, they are lured by the chance to debate, once more, scholarly subjects, to the exclusion of an appropriate review of the candidates teaching.

FROM MATRIX TO REDESIGN

How do we measure learning now? And does technology measure up?

The Carnegie unit of credit is a direct measure of time in class but an indirect measure of time on task and learning. Hutchins dismissed it as a mere tool for “educational measurement” (Higher). Three credits represents the quantum of a course, thirty a full-time student, sixty-four a major (close), one hundred and twenty a B.A. degree, and several thousand a building. Carnegie credits are useful for accounting for space and time in tables that simplify allocations or establish a series of equivalences. However, they do not account for the experience of learning directly. Many faculty see the matrix of credits for what it is: a lattice for mass accounting that over time we have naturalized as a representation of learning. Professors who disconnect seat time from learning must generate their own indices.

Such academic transformation has taken a technological turn over the last two decades. In the for-profit and the professional certification sectors, over 90% of institutions offer many courses and a few whole programs on-line (IPEDS, '07; NAPSAS, '08). This trend converged with a renewed interest not just in teaching but in learning, after the reform reports in the '80s. Together these movements away from standardized seat time inspired instructors to link the chronology in a course to learning outcomes (See the '09 AASCU Report, “Learning and Assessment”; and see the NC State inventory, <http://www2.acs.ncsu.edu/UPA/assmt/resource.htm>). Core data at Educause (Chaps. 2 and 3, '09) amply demonstrate the upward arc in networking, help services, and cost, as the increase in virtualized courses for use on campus exceeded the growth in such courses for use off campus.

But transformation implies purpose, and purpose suggests deliberate choice. Instead, higher education has succumbed to the imperative of the digital economy to saturate all sectors with personal devices that re-mediate experience for replay (“Daily Usage,” Pew, <http://www.pewinternet.org/Trend-Data/Daily-Internet-Activities-20002009.aspx>). Despite pockets of resistance in faculty who will not be moved from hands on and face to faces instruction, public universities have defended the purchases mainly by associating them with collaborative constructivism. The approach turns on a paradox. The traditional class, with little media, uses a broadcast model—one to many. Redesign, however, uses a group model—one with many. College pedagogy normally subjugates and alienates. Redesign through technology situates listeners as active learners. It creates knowledge out of information. Information is the raw and un-gathered. Social groups “cook” it into theory so that they can remediate the world.

Redesign anchors courses on learning outcomes; the courses then provide students with a mix of personal and group activities that encourage students to discover and create knowledge rather than just receive information in a lecture hall. Pacing and sequencing can differ among individual students and groups, unlike the fixed schedule of the traditional lecture class. The ease with which diverse media can be integrated into e-texts and re-sequenced empowers teachers to optimize the look and feel—in a sense, the GUI—of materials for students’ different neural predispositions (Twigg, “Model,” 30; Tappscott and Williams; Graves and Twigg).

But empirical research on such elaborate and nuanced interactions develops slowly (Halpern and Hakell; Roberts et al., Extending, 363-78), while the growth model of digital industries and coalitions requires that the penetration of new markets proceed rapidly (Brynjolfsson and Kahin, 2, 51-53, 57). This growth invokes Moore’s law for enhancing computing power, but it includes much more. Futurists, market interests, and partisans within institutions project needs that

accelerating power can meet. Then the conception of change must yield to the reception of change. And silicon conducts energy more effectively than social networks.

When the pace of innovation outstrips knowledge of effects, productivity measures like time to degree can stagnate because of the speculative use of resources. Of course, this trend mirrors the productivity gap between scale of IT investment and return in GDP that bedevils economists (Brynjolfsson, "Productivity," <http://ccs.mit.edu/papers/CCSWP130/ccswp130.html>). Finally, we must understand better than we do the relation between the vanguard and the inertial in the digital economy; these forces play out in universities. Both cohorts are part external industry and part coalition of users, marketers, and producers who briefly align to articulate agendas of need and satisfaction (Orlikowski and Iacono, 351-53). These coalitions produce compelling rhetoric about efficiency, and they invoke formulas that allocate learning into categories that respond optimally to different learning technologies. But they marshal scant evidence of productivity that exceeds investment. Rarely do they show worker satisfaction from the elimination of unproductive constraints and provision of data for more local decision-making. Thus, as we assess and account for the effects and efficiencies of traditional pedagogies, we must be clear-sighted about the effects of academic transformation, lest we spend ourselves into a darker age.

Before the mid '80s, expenses on instructional technology in Academic Affairs were intermittent, minor, and with little impact on other units. Today, scale and pace make such sizeable calls on resources that technology in general must be harnessed to purpose and interpreted in consumer and educational contexts. For example, learning and communication technology can amount to 10% of the cost of instruction, while expenditures on hardware have accelerated recently at 4-5% each year (Core Data, 16, 24-25). Students have abandoned desktops for laptops and handhelds and rely less frequently, they report, on the library as a physical and virtual portal (Core Data, 33, 37-40; ECAR, 3, 7-8). Yet libraries invest considerably in work stations, while annually they add digitized items by 15-20% (Comparing Libraries, IPEDS). The demands of career change and anticipated improvement in graduation rates from high schools will impel growth in the decades ahead. Planners assume that infrastructure for technology must expand to accommodate growth in enrollment over the next decade.

What will be the source for funding these changes? Consider these facts. State universities are increasingly reluctant to levy fees to support technology (Core Data, 22). Capital bonding for growth does not categorize technology separately from buildings. Thus, the mismatch between the end of virtualizing the campus and the means of funding facilities frustrates change. And universities are hesitant to disengage from the expenses of older technologies, even when industry no longer supports them, lest they aggravate clients for whom use has become an addiction.

LEARNING AS AN ORGANIZATION

If we do not know where higher education is headed, then we certainly do not know what road to pursue; and we have little confidence that change in course now will be viewed as correction later. Martin Trow ("Reflections," 56-57) and John Aubrey Douglass (3, 9-16) have developed assumptions about the next twenty-five years in higher education that can guide our thinking

about technology. Combined demand will increase for baccalaureate and other degrees/certificates linked especially to career change. But the encroachment of campuses on other zones, anxiety about energy consumption, and decreased access to bonds for capital projects will challenge delivery.

Further, the trend toward less support from the state and more reliance on fees, tuition, and external funding will cause states to scrutinize the interplay among tax codes, federal, state, and institutional grants in order to maximize the impact of aid. Meanwhile, student transfer will not be upward in tiers. Rather, it will resemble a swirl (Ewell, “Three,” 2-11; Adelman, “Answers”). Students will abandon continuous enrollment in a program. They will opt for item purchases of competitively priced courses at different institutions. The courses then can be fit, through transfer, into the jigsaw of requirements at the university that combines prestige and proximity with liberal rules for claiming residency—the right to graduate—from that school. At the same time, as media devices and mediated content become “necessary” purchases for professors and students, non-institutional costs rise. Universities will be pressured either to control these expenses or to accommodate the increasing share of the cost of college going by reducing the proportion for the operation of the university.

Historically, universities—even non-residential ones—have valued separation from the world so that students and professors can inquire, create, and converse dispassionately. Trow asserts that such activity requires considerable face-to-face interaction because communication consists of multiple gestures that the focused receptors of media cannot capture (“Reflections,” 58-59). As long as we believe this to be the case, then we must slow the erosion of instructional budgets, in particular, by virtual mimicry. This does not argue against virtualization and knowledge media; rather, it suggests that we re-balance ends and means.

Before investing in a learning or communication technology, we must be sure that it is portable. Consumer preferences trend that way; and portable devices reduce the need for duplicate stations. Also, learning and communication technology should leverage the personal ownership of devices by connecting, after authentication, to the plug and play portals of the university. This way, we avoid buying 1,000s of duplicate units that must be installed and maintained by 100s of staff. It is telling that we have 2 ½ times as many students as desktops in the inventory, but we tolerate a student-to-faculty ration that exceeds 24 to 1 (Core Data, 24).

Successful web firms minimize their role in the commercialization of hardware and even shy from live help for users; they rely instead on blogs and forums. Therefore, they can spend more on innovation. State universities especially face a familiar question. Do they research content and innovate delivery primarily? Or do they upgrade teachers’ presentation skills and remediate students’ basic skills, in the main? The preferred model for help in higher education is the just in time tutorial, which is just impossible to scale if we rely on special staff. Were faculty to graduate from learners to peer mentors as part of their service, scaling would not be an issue.

Learning, communication, and enterprise technology must fit comfortably within the strategy of virtualizing services that otherwise consume staff time. The GUIs associate familiar images with tabs that open functions like enrolling and paying; this approach camouflages the intricacies of the technology and task with symbols from an earlier time. (Think of desktops and cabinets on

the pc, mail folders in email, etc.) When the GUI is linked to a database that allows users to access and re-order elements in basic records and in transactions, a complete service is virtualized.

But have productivity and satisfaction improved? To answer, a state university and system must become learning organizations. They must ask researchable questions about effects, gather evidence from multiple measures, convert this information into reasonable inference in consultative groups, and then feed this probable knowledge to the appropriate agents in the process of change (Alavi, 110, 124-27). For example, campuses must track the staff and resources previously dedicated to the actual service. Campuses must assess whether the functionality and intelligibility of the transformed service were sufficient to merit change. They must learn from experience whether resistance to change and/or the frequency and extent of updates sap resources such that transformation adds rather than subtracts. Right now, we operate without benchmarks, in the dark.

Easily overlooked as we focus on technology itself is the capacity to manage knowledge in the university. Consider the most obvious, libraries in the digital age. Projects like the California digital library nest indices and tables (<http://www.cdlib.org/about/>). They intermix relative and absolute hyperlinks with traditional bibliographical entries. They are archive and authoring tool, study hall and performance space, network hub for streaming and spoke for receiving. They house an LMS and present gateways to the web. But are they not themselves learning management systems and portals to the digital? Finally, they convert isolated islands of information into an archipelago. Islanders now should re-think what is shared, common but held differently, and local.

However, are these issues just for libraries? Think of student records and institutional programs within a system of transfer, of learning objects discoverable in many instances of several LMSs, of personnel history with traces in vendor, customer, student, and staff records. Many of these federated projects benefit from forethought about tagging, searching, classifying, archiving, engaging, and expanding. To make sense of this complexity, the library must become more than a place anxious that the information web signals its decline. Its staff must participate vigorously in debates about knowledge management (Alavi, 124). How will universities organize and retrieve information? Without intelligent design, the web reduces to skeins of data that yield the most to those with the wealth for intelligent bots. With such design, the skeins constellate into patterns navigable by the masses. State universities and their libraries can be archipelagos of enlightenment. Separate, without the library's lead, they will store illuminated texts in a darkening age.

INDEX

- A**
- Academic Capitalism, 4
 - academic freedom, 19, 20, 22
 - academic transformation, 23, 24
 - accountability, 20, 21
 - Adams, 5, 7
 - affirmative action, 7, 15, 17
 - aid, 7, 9, 15, 17, 25
 - American indigenous peoples, 15
 - appropriation, 8, 12, 13, 14
 - Aronowitz, 4
- B**
- BA, 2, 6, 12, 17
 - Blacks, 7, 15
 - Bok, 4, 22
 - Boyer, 21, 22
 - Bureau of Labor Statistics, 6
 - business, 2, 3, 4, 6, 11, 12, 13, 20
- C**
- California Master Plan, 16, 21
 - Carnegie classification, 3
 - Carnegie unit, 19, 23
 - community colleges, 4, 9, 16, 18, 19
 - comprehensive, 2, 3, 4, 6, 7, 11, 13, 15, 16, 17, 18, 21, 22
 - constant dollars, 8
 - Continuing education, 11
 - contracts, 2, 8, 13, 14
 - corporation, 13
- cost, 3, 7, 8, 9, 10, 11, 12, 13, 16, 17, 19, 23, 25
- credit cards, 7
- D**
- debt, 7, 11, 13, 14
 - digital economy, 24
 - direct expenses, 6, 10, 13
 - discount, 9
 - diversity, 15, 18
- E**
- Endowments, 14
 - Entrepreneurialism, 4
 - e-texts, 7, 24
- F**
- faculty, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 16, 18, 19, 20, 21, 22, 23, 24, 26
 - for-profit, 5, 23
 - FTEF, 10
 - FTES, 7, 9, 10
- G**
- general education, 19, 22, 23
 - GI bill, 18
 - Google University, 7
 - graduation rates, 9, 15, 25
 - grants, 7, 8, 12, 13, 14, 15, 16, 17, 25
- H**
- high school, 2, 3, 6, 9, 12, 16, 17, 18
 - higher education, 2, 4, 5, 6, 8, 9, 14, 15, 16, 17, 18, 19, 24, 25, 26
 - Hispanics, 7, 15
 - Hutchins, 18, 23
- I**
- incubators, 12
 - indirect, 13, 23
 - information industry, 6
 - instructional technology, 25
 - intellectuals, 5, 6
 - IPEDS, 5, 8, 15, 17, 23, 25
- K**
- K-12, 2, 6, 9, 15, 21
 - Kerr, 4
- L**
- learning institutes, 22
 - legislative analyst, 9
 - levels, modes, and programs, 10
 - libraries in the digital age, 26
 - lower-division curriculum, 19
- M**
- marginal cost, 10
 - meritocracy, 16, 17
 - minorities, 15
 - mission, 3, 5, 13, 15, 18, 20, 21, 22
 - money-changers, 11
 - Money-managers, 6
- N**
- NSF, 14
 - NSOPF, 8, 21
- O**
- on-line, 23
 - outcomes, 19, 20, 23, 24
 - overhead, 13
- P**
- Parsons, 3
 - part-timers, 8, 10
 - prestige, 8, 25
 - price, 1, 8, 17
 - productivity, 22, 24, 26
 - productivity gap, 24
 - Proposition 13, 16
 - psychosocial moratorium, 16
 - public comprehensives, 4, 6, 7, 8, 9, 11, 12, 14, 15, 16, 17, *See* comprehensive
 - public MAs, 14
 - public RDs, 8
 - publications, 21
- R**
- R&D, 12, 14
 - remediation, 15, 16, 17, 18
 - reproduction of learners, 5
 - research, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 18, 20, 21, 22, 24, 26
 - review of professors, 21
- S**
- Said, 5
 - SAT, 16
 - scholarship of connectedness, 22
 - SFR, 10
 - shared governance, 20
 - Sperling, 4
- T**
- tax revolts, 15, 18
 - teaching, 3, 4, 6, 8, 11, 13, 15, 18, 21, 22, 23
 - Teaching at the People's University, 3

Tenure, 22
textbook, 7
three conceptions of
the good, 16
transfer, 2, 3, 9, 12, 15,
16, 17, 19, 20, 25, 27
transfer of knowledge,
2, 12

tuition, 6, 8, 9, 10, 12,
13, 14, 15, 16, 17, 25

U

unfunded mandates, 13,
21

University of Phoenix,
4, 7
unrestricted, 13, 14

V

Veblen, 3

W

women, 15