

The Evolution of the Research University: A Technical Analysis of Larry Cuban's Constancy and Change (1890–1990)

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The historical trajectory of higher education in the United States is defined by a persistent tension between two fundamental missions: the transmission of knowledge through teaching and the production of new knowledge through research. In his seminal work, "**How Scholars Trumped Teachers: Constancy and Change in University Curriculum, Teaching, and Research, 1890-1990**," Larry Cuban provides a rigorous analysis of how the research imperative fundamentally reshaped the American university landscape over a century. This technical analysis explores the systemic shifts, institutional mechanics, and pedagogical inertia that led to the dominance of the scholar over the teacher, examining the structural frameworks that have governed academic life for over 100 years.

Theoretical Framework: The Mechanics of Constancy and Change

To understand the evolution of the modern university, one must first grasp Cuban's distinction between **incremental change** and **fundamental structural shifts**. While the curriculum and research agendas of universities have undergone massive transformations, the actual methods of instruction—the way professors interact with students in the classroom—have remained remarkably constant. This phenomenon is often described in organizational theory as **institutional inertia**.

The Core Conflict: Research vs. Teaching

At the heart of Cuban's analysis is the conflict between the **teaching mission** (focused on student development, general education, and civic preparation) and the **research mission** (focused on specialized inquiry, publication, and peer recognition). The technical term for this divergence is **functional decoupling**, where an institution's stated goals (teaching) often diverge from its operational incentives (research funding and prestige).

- The Scholar Model: Prioritizes specialized expertise, rigorous methodology, and the dissemination of findings through peer-reviewed journals. Success is measured by citation counts, grant acquisition, and disciplinary influence.
- The Teacher Model: Prioritizes pedagogical skill, curriculum design for learner accessibility, and the mentorship of undergraduate students. Success is measured by student learning outcomes and instructional quality.

Historical Analysis: The Century of Transformation (1890–1990)

The period between 1890 and 1990 represents the most significant era of professionalization in American higher education. This era can be broken down into three distinct technical phases that shifted the balance of power within the university hierarchy.

Phase 1: The Humboldtian Shift (1890–1920)

During the late 19th century, the American university began to adopt the **German Research Model** (Humboldtian model). This shift introduced the graduate school as the center of the university, prioritizing laboratory work and seminars over the traditional lecture-and-recitation model of the colonial college. The technical implication was the

creation of **departmental silos**, where faculty members began to identify more with their discipline (e.g., Chemistry, History) than with their institution.

Phase 2: The Post-War Expansion (1945–1970)

Following World War II, the GI Bill and the rise of federal research funding (via the NSF and NIH) accelerated the prioritization of research. This era saw the birth of the "**Multiversity**," a term coined by Clark Kerr to describe a large, complex organization with multiple centers of power and competing interests. During this phase, the "Scholar" identity was solidified through the formalization of the **Tenure Track** system, which disproportionately rewarded research output over teaching excellence.

Phase 3: The Corporatization and Prestige Economy (1970–1990)

As universities became increasingly dependent on external funding and rankings, the **Prestige Economy** became the primary driver of institutional behavior. Universities competed for high-ranking scholars to boost their status, leading to what economists call the "**Academic Ratchet**," where faculty workload shifted further away from classroom instruction toward grant administration and specialized inquiry.

Technical Analysis of University Resource Allocation

The dominance of research is not merely a cultural shift; it is encoded in the **resource allocation model** of modern institutions. The following table illustrates the technical differences in institutional priorities between the teaching-focused colonial model and the research-focused modern university.

Metric / Feature	Collegiate Teaching Model (Pre-1890)	Research University Model (Post-1990)
Primary Output	Character and Civic Virtue	Scientific Discovery and Specialized Knowledge
Faculty Incentive	Student Mentorship	Peer-Reviewed Publication / Grant Funding
Curriculum Structure	Prescribed Liberal Arts Core	Elective-Heavy, Specialized Majors
Classroom Pedagogy	Recitation and Direct Instruction	Lecture (Constancy) / Lab Research (Change)
Funding Source	Tuition and Endowment	Federal Grants and Corporate Partnerships
Institutional Governance	Centralized Administration	Decentralized Departmental Autonomy

The "Academic Ratchet" Formula

To quantify the shift toward research, sociologists of education often use the concept of the **Academic Ratchet**. This can be represented conceptually by the following relationship:

$$P = (R \times G) / (T + S)$$

Where:
P = Institutional Prestige
R = Research Output (Publications/Citations)
G = Grant Funding (External Revenue)
T = Teaching Load (Inversely correlated with prestige)
S = Service Obligations

As **P** (Prestige) increases, institutions systematically attempt to decrease **T** (Teaching Load) for their top-tier faculty, delegating instructional responsibilities to graduate assistants or non-tenure-track instructors. This structural formula explains why "Scholars Trumped Teachers" consistently across different types of universities.

Structural Impediments to Pedagogical Change

One of Larry Cuban's most profound findings is the **resilience of the lecture format**. Despite technological advancements and pedagogical research suggesting more effective methods (e.g., active learning, flipped classrooms), the traditional lecture has remained the dominant mode of instruction for over a century. The reasons for this constancy are technical and systemic:

1. **Spatial Constraints:** The physical architecture of universities—large tiered lecture halls—is designed for one-way information transmission, making interactive teaching technically difficult.
2. **Time Allocation:** Research requirements consume the majority of a faculty member's cognitive bandwidth. The lecture is the most time-efficient way to deliver content to a large number of students simultaneously.
3. **Lack of Professional Training:** While PhD programs provide rigorous training in research methodology (the scholar), they rarely provide formal training in pedagogy (the teacher).
4. **Evaluation Metrics:** Student evaluations of teaching (SETs) are often criticized for measuring student satisfaction rather than actual learning gains, providing little technical incentive for professors to innovate in the classroom.

The Impact on Curriculum: Change Without Reform

Cuban argues that while the *content* of the curriculum changes (e.g., adding courses on computer science or post-colonial literature), the *structure* of how students experience that curriculum remains stagnant. This is termed **"Change Without Reform."**

Curricular Technical Workflow

The process of curricular change usually follows a predictable, bureaucratic path that avoids addressing core pedagogical issues:

- Step 1: Departmental Proposal: A faculty member proposes a new course based on their specialized research.
- Step 2: Committee Review: A curriculum committee evaluates the course based on credit-hour requirements rather than instructional methodology.
- Step 3: Catalog Integration: The course is added to the elective list, increasing the specialization of the major.
- Step 4: Implementation: The course is delivered via traditional lecture, maintaining the pedagogical status quo.

Case Studies in Constancy: Stanford and the University of California

The research by Cuban highlights several case studies, most notably at prestigious institutions like **Stanford University** and the **University of California** system. In these environments, the pressure to maintain elite research status created a "locked-in" effect.

The Stanford Case Study

In the early 20th century, Stanford attempted to maintain a balance between teaching and research. However, as the **Cold War** began, the influx of federal research dollars (the "Vannevar Bush" model) necessitated a shift. The technical requirement for securing these grants was a faculty comprised of world-renowned specialists. Consequently, teaching requirements were reduced, and the "Teacher-Scholar" ideal was gradually replaced by the "Researcher-Administrator" model.

Troubleshooting the Teaching-Research Gap

Institutional leaders have tried various "patches" to address the decline in teaching quality, but most have failed due to their inability to change the underlying incentive structures.

Attempted Solution	Implementation Method	Failure Mode / Challenge
Teaching Awards	Financial bonuses for "Best Teacher."	Low systemic impact; does not affect tenure requirements.
Pedagogical Centers	Establishing Centers for Teaching and Learning (CTLs).	Often marginalized; voluntary participation only.
Undergraduate Research	Involving students in faculty research.	High cost-per-student; limited to specific disciplines.
Differentiated Tracks	Creating "Teaching Professor" roles.	Often results in a two-tier system with lower prestige for teachers.

The Professionalization of the Faculty

A critical component of this history is the **professionalization of the academic career**. By 1990, the path to a professorship was strictly standardized. This standardization focused on technical mastery of a sub-discipline, usually demonstrated through a doctoral dissertation. This process creates a **disciplinary identity** that is often stronger than the institutional identity. A biologist at Harvard feels more connected to a biologist at Oxford than to a philosopher at Harvard. This technical alignment toward the discipline reinforces the research mission, as the discipline provides the peer review and validation necessary for career advancement.

The Digital Transition and the Future of Constancy

While Cuban's primary analysis ends in 1990, the decade leading up to it saw the introduction of digital technologies that many predicted would revolutionize teaching. However, following Cuban's logic, these technologies were largely **assimilated into existing structures** rather than used to reform them. Computers were used to create more sophisticated lecture slides (PowerPoint) rather than to replace the lecture itself.

Technical Integration of Educational Technology (EdTech)

The integration of technology into the university typically follows a **Substitution-Augmentation-Modification-Redefinition (SAMR)** model. However, in the 1890-1990 period, most innovations remained in the Substitution or Augmentation phases.

- Substitution: Using an overhead projector instead of a chalkboard.
- Augmentation: Providing printed handouts to supplement a lecture.
- Modification/Redefinition: These phases, which require a total rethink of the teaching process, were largely absent from the major research universities during this century of growth.

Strategic Implications for Modern Institutions

The century-long dominance of the scholar over the teacher has profound implications for the sustainability of the modern university. As tuition costs rise, the value proposition of the traditional research university is being questioned. The technical challenge for the 21st century is to decouple the **prestige of research** from the **quality of instruction**.

For a university to truly "reform" rather than just "change," it would need to address the following technical pillars:

1. Reforming the Tenure Metric: Integrating verified pedagogical outcomes (not just SETs) into the permanent

record of faculty performance.

2. Instructional Design Integration: Moving from individual faculty autonomy in course design to a collaborative model involving instructional designers and media specialists.

3. Infrastructure Overhaul: Designing learning spaces that prioritize collaborative problem-solving over passive observation.

4. Financial Transparency: Clearly articulating the cross-subsidization of research by undergraduate tuition, a technical reality that is often obscured in institutional budgeting.

The historical record from 1890 to 1990 suggests that the university is one of the most resilient and conservative organizations in human history. Its ability to absorb change while maintaining structural constancy is its greatest survival mechanism. However, as Larry Cuban demonstrates, this resilience has come at a significant cost to the instructional mission. The "triumph" of the scholar was not an accident of history but a result of deliberate institutional choices, funding structures, and the professionalization of the academic mind. Understanding this history is the first step toward any meaningful attempt to re-equilibrate the balance between discovering knowledge and teaching it.

By analyzing the decades between 1890 and 1990, we see that the university has evolved into a highly specialized machine designed for research. The "constancy" of teaching is the direct result of this specialization. For the teacher to once again stand on equal footing with the scholar, the very architecture of the university—from its departmental silos to its tenure requirements—would need to be re-engineered from the ground up. Without such fundamental structural reform, the patterns observed by Cuban will likely continue well into the current millennium, with the research mission serving as the primary engine of the institution and teaching remaining a secondary, albeit essential, function.

Tags: #Larry Cuban #Higher Education Reform #Research vs Teaching #University History #Pedagogical Constancy

