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The Signaling Imperative: Reassessing Higher Education's Value Proposition in a Shifting US Market

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Abstract

This study examines the growing applicability of signaling theory in understanding the US higher education market's structural challenges. Analyzing current trends through the signaling lens reveals how credential inflation, workforce misalignment, and financial unsustainability stem from education's dual function as human capital investment and positional good. With public trust declining, alternatives proliferating, and policy debates intensifying, institutions face pressure to demonstrate authentic value beyond mere signaling. Empirical evidence suggests 20-80% of education's wage premium may derive from signaling rather than skill acquisition, creating systemic inefficiencies. Strategic responses emphasizing verifiable learning outcomes, innovative credentialing, and outcomes transparency offer pathways to rebalance the signaling-human capital equilibrium.

Keywords: *Signaling Theory, Credential Inflation, Workforce Misalignment, Higher Education Market, Human Capital, Positional Good*

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1 Introduction: The Signaling Paradox in Higher Education

The US higher education system stands at an inflection point characterized by unprecedented financial pressures, eroding public confidence, and fundamental questions about value proposition. Trust in higher education has steadily declined, with only 47% of Americans considering college worthwhile without loans—dropping to 22% when loans are involved (Higher Education Inquirer, 2025). This crisis of confidence coincides with market

consolidation (over 40 college closures since 2020) and policy turbulence including endowment tax proposals, research funding cuts, and DEI compliance pressures(Donovan et al., 2023). These forces demand reassessment of higher education's economic and social functions. Signaling theory, revitalized by Bryan Caplan's seminal work, posits that education primarily functions as a costly screen for pre-existing traits (intelligence, conscientiousness, conformity) rather than primarily developing human capital (Caplan, 2018). This study synthesizes empirical evidence and current market trends to argue that signaling dynamics: (i) explain credential inflation and degree proliferation, (ii) intensify under financial and competitive pressures, (iii) create systemic inefficiencies requiring strategic rebalancing, and (iv) offer frameworks for innovating beyond traditional models.

2 Theoretical Framework: Human Capital vs. Signaling Theories

2.1 Core Conceptual Distinctions

The human capital model views education as productivity-enhancing investment where knowledge/skill acquisition explains wage premiums. Signaling theory contends education primarily certifies innate abilities through persistence in demanding systems, with minimal skill transfer (Ehrmantraut et al., 2020). Economist Kenneth Arrow's formulation captures this distinction: "Higher education contributes in no way to superior economic performance; it increases neither cognition nor socialization. Instead, it serves as a screening device" (Mincer, 1974).

Table 1: Contrasting Theoretical Foundations

Dimension	Human Capital Theory	Signaling Theory
Primary economic function	Productivity enhancement	Information revelation
Social returns	High (skilled workforce)	Low (positional competition)
Policy prescription	Public subsidy justified	Reduce public funding
Credential value	Content-dependent	Relative scarcity-dependent
Skill development	Central mechanism	Incidental byproduct

2.2 Empirical Evidence for Signaling's Prevalence

Multiple econometric approaches suggest 20-40% of higher education's wage premium derives from signaling, with Caplan arguing up to 80% in specific contexts (Caplan, 2018). Key evidence includes:

- **Ability bias persistence:** When controlling for educational attainment, higher intelligence correlates with higher income, suggesting pre-existing traits drive outcomes.

- **Curriculum-content disconnect:** Minimal retention of subject-specific knowledge (e.g., foreign languages, tax preparation) despite years of study.
- **Credential inflation acceleration:** Master's degrees becoming entry-level requirements despite unchanged job complexity.

The signaling model powerfully explains why employers value philosophy graduates for banking roles and why community college graduates face wage penalties despite comparable course content—the institution's selectivity signals worker quality(Kaymak, 2025).

3 Signaling Theory in Contemporary Market Dynamics

3.1 Financial Pressures and Signaling Arms Races

Institutions facing operating deficits (reported by 4 of 14 Big Ten universities in 2023) (Higher Education Inquirer, 2025; Kaymak, 2025)and endowment threats (proposed excise tax increases from 1.4% to 10%) increasingly rely on prestige competition. This fuels costly facilities races and administrative bloat as institutions signal quality through non-academic attributes. Simultaneously, students respond to labor market signaling demands by pursuing advanced degrees—not primarily for skill development but as competitive differentiators(Darien Rossiter & Belinda Tynan, 2023). This creates a vicious cycle:

Policy uncertainty → Funding instability → Institutional prestige competition → Rising tuition → Student debt accumulation → Demand for stronger signals → Credential inflation

The "some college, no credential" (SCNC) population ballooning to 36.8 million (+2.9% since 2021) (Araki & Kariya, 2022) represents partial signaling failures where students absorbed costs without obtaining the credential signal.

3.2 Labor Market Misalignment and Alternative Pathways

Employer behavior increasingly validates signaling interpretations:

- Degree requirement abandonment: 41% of US organizations have dropped degree requirements for certain roles.
- Alternative credential acceptance: 48% of employers view non-degree credentials as viable substitutes.
- Skills-focused hiring: Apprenticeships grew 102% (317,000 to 640,000) in a decade, particularly in healthcare and technical fields.

Table 2: Employer Signaling Preferences in Hiring

Signal Type	Traditional Manifestation	Emerging Alternatives
Cognitive ability	Selective college admission	Skills assessments, challenge projects
Persistence/compliance	Degree completion	Professional certifications,

		portfolio continuity
Specialized knowledge	Major declaration	Microcredentials, industry badges (e.g., Google Certificates)
Social conformity	Extracurricular involvement	Volunteering, community leadership

These shifts reflect rational employer adaptation to signaling noise and credential inflation. The rise of "career-aligned academic programs" (Buban, 2017) represents institutional recognition that signaling value must be supplemented with verifiable skill application.

3.3 Equity Implications and Access Barriers

Signaling dynamics disproportionately impact underrepresented populations:

- **Credential inflation penalties:** As bachelor's degrees become commonplace, marginalized groups must invest more for equivalent signaling returns.
- **Accessibility gaps:** While 75% find apprenticeships appealing, only 29% find them accessible due to geographic and informational barriers.
- **Conformity signaling bias:** Non-traditional pathways struggle to signal equivalent employability despite comparable skill development.

Caplan notes the regressive nature of signaling competition: "You must dwell on the opportunities the poor have lost because of credential inflation. When most Americans didn't finish high school, dropouts faced little stigma... The stigma is now severe"(Gallice & Grillo, 2018). This creates a positional goods trap where education functions less as opportunity elevator than exclusionary gatekeeper.

4 Policy Implications: Recalibrating the Signaling-Human Capital Balance

4.1 The Subsidy Debate

Signaling theory fundamentally challenges higher education's public subsidy rationale. If 80% of returns are private signaling benefits, taxpayer funding constitutes regressive wealth transfer subsidizing employer screening costs (Kjelland, 2008). This underpins proposals like:

- **Targeted subsidy reductions:** Eliminating funding for programs with weak employment outcomes.
- **Human capital-weighted funding:** Aligning subsidies with verifiable skill development metrics.
- **Signaling tax proposals:** Taxing endowment income to capture positional good rents.

However, abrupt defunding risks collateral damage to research, civic education, and legitimate

human capital development(D'Amato &Mookherjee, 2014; Kato et al., 2020). A more nuanced approach would distinguish between pure signaling programs (e.g., general studies with weak outcomes) and human capital-intensive programs (e.g., nursing, engineering)(Botezat, 2016).

4.2 Accreditation and Accountability Reforms

Current quality assurance mechanisms often reinforce signaling by measuring inputs (faculty credentials, library volumes) rather than learning outcomes. Reforms could:

- **Shift emphasis toward competency validation:** Western Kentucky University's data-driven enrollment management increased enrollment by 100+ students and added $2.4 million in net tuition revenue through improved signaling of student success likelihood.
- **Promote transcript innovations:** Granular skill inventories replacing traditional grades.
- **Develop signal calibration systems:** Standardized skills assessment across institutions.

The University of Wisconsin's program array review—evaluating underenrolled programs for consolidation or closure—exemplifies system-level signaling optimization (García-Aracil& Albert, 2017). Such initiatives acknowledge that signaling efficiency requires strategic program reduction.

5 Strategic Institutional Responses

Forward-looking institutions are leveraging signaling theory to enhance value proposition through the four key approaches: (i) learning outcomes, (ii) credential value, (iii) transparency, and (iv) differentiation(Stibbard, 1999; Yuki, 2009).

1. **Signaling Authentic Learning Outcomes**

a. Skills-based admissions: Degree programs accepting industry certifications as entry requirements.

b. Learning gain documentation: Digital portfolios with verifiable project work.

c. Employer co-validated curricula: University at Austin's administrative streamlining (including offshore services) reduces costs while maintaining rigor.

2. **Disaggregating Credential Value**

a. Microcredential stacking: Graduate certificate enrollments increased nearly 10% in Spring 2024.

b. Competency hubs: Monetizing assets through innovation centers like Pennovation Works.

c. Accelerated degrees: Three-year bachelor's programs with compressed schedules.

3. **Transparency as Competitive Advantage**

a. Outcome data publication: Employment rates and salary figures by program.
b. True cost calculators: Addressing application confusion cited by 30% of prospects.
c. AI-enabled guidance: Georgia State's "Pounce" chatbot reduced summer melt by 22% through clearer signaling.

4. **Strategic Consolidation and Differentiation**
    a. Mission-focused program arrays: 50% of presidents acknowledge having too many programs needing discontinuation.
    b. Niche signaling: Private institutions like Villanova and Cabrini College merging while preserving faith-based identities.
    c. Public-private partnerships: Employer-funded tuition programs reducing student signaling investment.

6 Conclusion: Toward a Balanced Signaling Ecosystem

Signaling theory provides a powerful explanatory framework for understanding higher education's contemporary crises—from credential inflation and skills mismatches to equity gaps and financial instability. Evidence suggests 20-80% of education's private returns derive from signaling rather than human capital development, creating systemic inefficiencies requiring strategic intervention(Spence, 1973).

However, complete elimination of signalingremains neither feasible nor desirable(Collins, 2011). Credentialing provides valuable information efficiency in complex labor markets. The challenge lies in rebalancing the signaling-human capital equilibrium through:

1. Democratizing signal access: Alternative pathways with equivalent labor market recognition.
2. Containing signaling costs: Accelerated timelines and technological efficiencies.
3. Validating human capital: Verifiable skills documentation reducing employer reliance on proxy signals.
4. Transparency regimes: Enabling rational signaling investment decisions.

As institutions navigate "a smaller market where more questions are being asked" (Viennet & Pont, 2017), those acknowledging signaling's role while demonstrating authentic value beyond certification will thrive. Higher education's future requires not signaling's abolition but its integration with verifiable human capital development—transforming the degree from positional trophy into capability passport.

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