



Cybernetics and Artificial Intelligence Laboratory

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Classical Education in the AI Age and the “Theory of Occupational Obsolescence”

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Abstract

This paper revisits Rexford G. Tugwell’s 1931 “theory of occupational obsolescence” to illuminate the parallels between the mechanization upheaval of the early twentieth century and the disruptive wave of Artificial Intelligence and cybernetic technologies in the present era. It analyzes the risks of occupational displacement, the ethical dilemmas of technological progress, and the profound societal consequences of underinvesting in general, classical, education. Grounding the argument in classical wisdom—drawing on sources from Xenophon, Plutarch, Marcus Aurelius, and Byzantine and Renaissance traditions—the paper demonstrates that classical education not only preserves intellectual adaptability and ethical leadership but also serves as the true antidote to human obsolescence. With examples from ancient and modern texts, it makes a strong case for embedding classical training within the foundation of modern curricula to foster resilience, innovation, and civic responsibility, ensuring the dignity and enduring relevance of future generations in the face of ongoing mechanization and digital transformation.

Introduction: History’s Stubborn Repetition

In 1931, Rexford G. Tugwell made a diagnosis of industrial civilization that reads today not as historical artifact but as the foretelling of a prophecy. His theory of occupational obsolescence—the systematic displacement of human skill by mechanization—identified a pattern that society has failed to interrupt for nearly a century. Today, as artificial intelligence threatens to automate various ranges of cognitive labor on an unprecedented scale, we face the same crisis Tugwell documented: technological progress advancing faster than contemporary social wisdom, leaving displaced workers with carrion soup in one hand and a halter in the other. The repetition of this pattern is not inevitable fate but potentially willful negligence, if not outright ignorance of the virtuous method of governance, a failure to heed the lessons embedded in classical wisdom and to equip the new generations with the enduring intellectual foundations that resist obsolescence.

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The Pattern: From Enclosures to Algorithms

Tugwell traced occupational obsolescence back to the English enclosure movements, with dispossessed yeomen, skilled farmers who could neither sell their meager possessions nor find work for hands trained only to till soil. Goldsmith's *Deserted Village* captured the anguish: where wealth accumulates and men decay, stripped of occupations that represented long conditioning to economic opportunity. The industrial revolution repeated this trauma with factory mechanization, the Luddite riots, and workers breaking frames in futile resistance – for resistance to progress is futile; the real question is the transformative power of progress and technology.

Now, in 2025, the pattern manifests again through machine learning, robotic process automation, and the explosion of large language models. The cognitive craftsman—the accountant, the paralegal, the analyst, the writer—faces the same potential dispossession that textile workers endured two centuries ago. Tugwell observed that sentiment of pity has stirred men often but never translated into corrective action, only palliative relief. We offer retraining programs as we once offered workhouses, addressing symptoms while ignoring the structural failure: we have built an economic system that systematically eliminated the value of specific human capabilities without creating institutions to protect both the capabilities and also human dignity.¹

The Illusion of Adaptation

The conventional economic response—that displaced workers will find new employment in expanding industries—has been already exposed as wishful thinking. Tugwell suggested almost a century ago that this formula fails on multiple grounds. First, new industries adopt the most advanced labor-saving technologies from inception; the automotive industry showed the greatest per-man-hour efficiency increases precisely because it was new. Second, the normal working life has shortened alarmingly, with workers over forty finding reemployment difficult and those over fifty nearly impossible, as employers prefer younger, more flexible minds – something that is clearly true today. Third, most educational systems lag catastrophically behind industrial and new technological requirements, producing workers trained for vocations that either no longer exist or have already been transformed to require a different skillset – a critical problem we are facing in academia today.

This failure is not technical, for one cannot claim that technology is to blame: technology is human progress in itself. The problem is, at its core, philosophical. We have embraced vocational training—preparing

¹A point of social note is a return of many skilled professionals to older occupations, particularly in the custom crafts; a casual look at social media will reveal many that construct custom items using skills of old and contemporary machinery.

students for specific jobs—in an economy that will systematically eliminate these specific jobs. Tugwell noted the dilemma: modern work requires mental alertness, powers of analysis, ready adaptability, and comprehension of scientific method, not narrow vocational skills. Yet genuinely active practice of educational principles that develop these capacities is distressingly slow to spread. We train future work force participants to be instruments for particular tasks, then wonder why they become obsolete when tasks change.

Education for Permanence

Classical education offers the antidote to occupational obsolescence because it trains not for specific tasks but for intellectual permanence. The Trivium—Grammar, Logic, and Rhetoric—develops capacities that resist technological displacement. Grammar teaches linguistic precision, the ability to master and manipulate symbolic systems with surgical exactitude. This translates directly to effective communication with AI systems, where every word, qualifier, and specification shapes output. Logic develops systematic reasoning, the ability to construct and evaluate arguments, to identify patterns and expose fallacies. This becomes essential for evaluating AI-generated content and understanding algorithmic processes. Rhetoric cultivates persuasive communication, the ability to craft instructions that maximize potential while minimizing limitations. We must remember that what we celebrate as AI today is called “large language models” and therefore the use of language in communicating with AI becomes paramount. The original meaning of the word “technology” is the art (*techne*) of logos (word but also reason). Does not, then, make eminent sense to consider the foundations of language as a permanent skill in the AI era?

Beyond the Trivium, classical education develops cross-disciplinary thinking by treating knowledge as integrated rather than fragmented into isolated subjects. Students who read Pliny the Younger’s account of Vesuvius learn simultaneously about Roman politics, volcanic science, geography, and moral philosophy. This interdisciplinary synthesis becomes crucial in an AI age where the best solutions combine insights from multiple fields. The classically trained student develops mental agility and enhanced perspective—precisely what is required to adapt to ever-changing job markets and embrace new technologies.

Most critically, classical education emphasizes ethical reasoning and moral philosophy. As AI becomes more powerful and pervasive, the ability to think through ethical implications becomes not merely valuable but necessary for responsible implementation. Students steeped in discussions of human nature, justice, and virtue are uniquely positioned to guide technology toward human flourishing rather than human obsolescence. The concept of virtue (*arete*) is central in classical education and we need to revive it within classes and the application of learning.

Classical Principles against Ephemeral Techniques

Tugwell quoted Goldsmith's prophetic advice:

*Teach erring man to spurn the rage of gain; Teach him that states of native strength possessed,
though very poor, may still be very blessed; That trade's proud empire hastes to swift decay, as
ocean sweeps the labored mole away; While self-dependent power can time defy, as rocks resist
the billows and the sky.*

This is not romantic primitivism but profound insight: specialized, highly articulated economic systems are vulnerable precisely because of their efficiency. Self-sufficient systems—and self-sufficient minds—possess the supreme virtue of security via reservoirs of autarky.

Classical wisdom teaches self-dependent intellectual power. The student who masters ancient Greek and Latin possesses linguistic foundations that make modern languages accessible. The student who studies Euclidean geometry develops reasoning capacities that transfer to programming logic. The student who reads Aristotle's *Ethics*, Cicero's *De Officiis*, and Marcus Aurelius's *Meditations* develops moral frameworks that remain relevant whether the economy runs on steam, electricity, or algorithms – they remain relevant because they taught about self-understanding and human interactions.

This is the essential difference between classical and modern vocational education. Vocational training makes workers dependent on the continuance of specific industries and techniques—it creates vulnerability. Classical education develops capacities that remain valuable regardless of technological regime—it creates resilience. Tugwell observed that new employments demand not vocational hearts but **general aptitudes**: analysis, comprehension, adaptability. These are precisely the capacities that classical education cultivates through engagement with difficult texts, complex arguments, and timeless questions.

Against Degradation

Tugwell insisted that occupational obsolescence encompasses more than unemployment; it includes degradation, being forced to take hated jobs, losing the ability to exercise cherished skills. The craftsman who takes pride in his art experiences resentment against dispossession because skills are part of a jealously regarded self. Modern retraining programs that shuttle displaced professionals into service work or generic administrative roles fail to address this loss of identity and purpose.

Classical education provides dignity that transcends occupation. The person educated in the classics possesses cultural literacy, historical perspective, and philosophical grounding that constitute intrinsic rather than merely instrumental value. This person is not reducible to economic function. When Goldsmith wrote

of the preacher and schoolmaster driven from villages by enclosure, he captured the tragedy of intellectual workers losing not just income but vocation: no longer were they able to use their words of learned strength and thundering sound. The classically educated person possesses words of learned strength—capacities for analysis, expression, and judgment—that remain valuable even when specific job markets collapse.

Moreover, classical education develops strong work ethic and self-discipline through rigorous engagement with demanding, rather than convenient, material. Students learn perseverance by progressing from foundational knowledge to advanced concepts, from absorbing information to analyzing and synthesizing it. This produces individuals who intrinsically manage time, develop strong work ethic, and pursue excellence regardless of immediate economic reward. Such individuals are less vulnerable to the psychological devastation of displacement because their identity and purpose derive from internal cultivation rather than external employment.

Governing the Machine Age

Tugwell also argued that we need courage to experiment with social institutions, to establish disciplines and responsibilities for businesses and consumers alike. He called for restraints that serve both public interest while allowing for the corporate profit, for planning that aligns technological change with human welfare – and not preservation of elitist privilege that we observe today. Who will provide this leadership? Not the narrowly trained specialist who knows only efficiency metrics, nor the technologist who understands only algorithms.

Leadership in the AI age requires precisely the capacities that classical, general, education develops: the ability to think across disciplines, to evaluate competing goods, to recognize patterns across history, to communicate persuasively, and to reason ethically. The student trained in rhetoric learns to debate, persuade, argue, and promote ideas—essential skills for shaping public policy. The student trained in history recognizes that current crises have precedents and that institutions are human contrivances subject to revision. The student trained in philosophy can articulate principles for technological governance that balance innovation with justice.

Tugwell noted that institutional reforms require seeing clearly what we want to do and demonstrating sufficient benefits to justify change. This is the work of the classically educated mind: to envision possible betterment, to craft compelling arguments for institutional experimentation, to lead society toward futures that honor human dignity. The most valuable employees and citizens will be those who combine timeless skills of clear thinking and effective communication with modern technical literacy. They will craft precise instructions for AI systems, think critically about outputs, understand ethical implications, communicate

complex ideas clearly, and adapt quickly to new capabilities.

Illustrative Examples of Classical Arguments

Classical Education as the School of Virtue and Leadership Classical education is not simply a vehicle for intellectual adaptability; it is also the primary means for cultivating character, just leadership, and a sense of public duty. As Plutarch notes, the philosopher and educated ruler “philosophizes on behalf of public interest and refines the general power by which all are governed,” with philosophy “not merely carving statues for the pediments, but inspiring brave deeds and judgments beneficial to the common good” (*On Listening*, 776C-D, 778F). In this tradition, rulers must first subject themselves to reason, internalizing the law as “king of all” (780C-E).

Exemplars of Justice, Ethics, and Intellectual Freedom Education, in the classical sense, produces citizens capable of confronting both private and public injustice. Xenophon relates how Persian youths were schooled in justice, how trials for ingratitude were treated as of utmost societal importance, and how true leadership and sound administration merge with responsibility (*Cyropaedia* I.ii.6-7, I.iii.17, I.vi.36-38). The truly classically educated leader manifests the maxims of philosophy through public action, as seen in statesmen such as Pericles or Epaminondas.

Administrative Virtue and Balanced Power Plutarch insists that only the soul trained in self-knowledge and real philosophy can engage in politics or wield authority without being corrupted by the passions. Alexander the Great, for example, was guided to study philosophy with Aristotle “that he might not commit many things which he should regret” (*On Virtue*, 178E-F). Classical training instills humility, tolerance, meritocracy, and the transformation of personal virtue into collective benefit (*Political Precepts*, 799B-800C, 809E).

Classical Education and Self-Mastery In his *Meditations*, Marcus Aurelius asserts that philosophy alone guarantees true self-governance and civic solidarity. He teaches, “the soul must remain obedient to its own inner reason, utter only truth, and perform only justice,” emphasizing steadfastness, independence, and “ataraxia” (unperturbed spirit) amidst external adversity (*Meditations*, 3.16.2; 4.1; 9.23; 9.31).

Leo the Wise: Ancient Precepts for Modern Decision-Making The precepts of Leo the Wise underscore ancient counsel for modern leaders. Leo stresses that the true leader embodies prudence—self-control, sobriety, wakefulness, frugality, and physical as well as intellectual resilience. Crucially, he is held in high

regard because he governs for the people, not over them. Leo's exhortations to steady, unpanicked judgment, to deliberate counsel before action, and to the avoidance of avarice and pettiness, serve as reminders that leadership is both strategy and ethic: "Be calm and undisturbed with what comes your way. For a savage disposition is both despised and should be avoided." Deliberation must address not only whether to act, but the how, when, where, why, and by whom—anticipating complexities and unforeseen outcomes. The leader, Leo maintains, surrounds himself with counselors of skill and integrity, never choosing advice for self-gratification but for truthful utility.

Creativity and Critical Thought Xenophon stresses that true education leads not merely to imitation, but to inventiveness: "It is not enough to utilize the lessons of others; one must become himself an inventor of stratagems, as musicians compose new works" (*Cyropaedia*, I.vi.38). Classical education raises humans as judges, investigators, and creators—not mere executors.

Self-Knowledge, Temperance, and Ethical Deliberation Marcus Aurelius teaches that peaceful and self-sufficient life depends upon the cultivation of the mind, the ability for impartial interrogation, and a prioritization of the common good (*Meditations*, 3.7; 3.9; 8.2; 9.15; 12.20). To be masters of our response to circumstances means, "making every obstacle an opportunity for progress, as fire consumes all thrown upon it and surges higher" (*Meditations*, 4.1).

Xenophon and the Foundations of Civic Leadership Xenophon's *Education of Cyrus* is not merely history, but a treatise on the foundational virtues for enduring civic leadership. Xenophon connects education and moral responsibility, arguing that only by integrating both do rulers and citizens attain lasting excellence. His portrait of Cyrus goes beyond individual prowess: Cyrus is exemplary for education, equality, consensus, justice, and service to the state. The Persian model developed by Xenophon recognized that every citizen must be entitled to education so that merit, not birth, determines advancement—a principle modern societies still profess to emulate. Training in justice and virtue meant practical exercises: respect for elders, discipline, and community service were built into daily education. Through meritocracy and public deliberation, Cyrus fostered participation and collective decision-making, even among soldiers, as a prototype of inclusive administration. Xenophon reminds us that the most effective leaders are those who earn the trust of their people, combine decisiveness with consultation, and regard individual achievement as inseparable from the broader good.

The Classical Legacy—Education, Adaptability, and the Double-Edged Sword of Power Political thinkers from Machiavelli back to Xenophon devoted close attention to the education and formation

of rulers. Unlike Plato’s philosopher-king, Xenophon’s model underscores the necessity of both natural gifts and lifelong education. To Xenophon, the ideal prince—Cyrus—is not just a tactician, but a product of training in justice, moderation, human management, and the duty to harmonize self-interest with communal well-being. Later, Machiavelli admired but also critiqued Xenophon’s apparent optimism: for Machiavelli, virtues are only meaningful if they bring stability and security, and sometimes virtue itself must be compromised for the good of the state. However, even Machiavelli acknowledged that rulers educated for flexibility and adaptability—trained in philosophy and practical deliberation from youth—are most capable of steering the state through turmoil. While Machiavelli advocates reason of state and firmness in adversity, his reliance on and critique of Xenophon proves that the classical tradition still anchors the debate on whether education alone can ensure the ethical character of leadership.

Synthesis: The Strongest Foundation The examples and passages from classical texts bear irrefutable witness that classical education provides not just professional resilience, but above all a school for leadership, virtue, creativity, and self-mastery. These are the very resources that ensure humanity stands firm before new developments, shaping them for justice and the public good, not merely surviving as replaceable tools at the mercy of technological change.

Conclusion: Breaking the Cycle

For nearly two centuries, industrial societies have repeated the same pattern: technological advancement, occupational displacement, worker suffering, palliative measures, resumed advancement. Tugwell diagnosed this cycle in 1931, yet here we stand in 2025, facing mass cognitive displacement by AI, offering retraining programs and universal basic income while failing to address root causes. The cycle continues because we educate for obsolescence rather than permanence, train for specific tasks rather than general capacity, and value economic efficiency over human flourishing and sustainable growth.

Breaking this cycle requires commitment to classical education and classical wisdom. We must equip the younger generation not with narrow vocational skills but with intellectual foundations that resist technological displacement: linguistic precision, logical reasoning, rhetorical power, ethical grounding, historical perspective, and cross-disciplinary synthesis. We must teach them that self-dependent intellectual power can time defy, as rocks resist the billows and the sky. We must cultivate not workers optimized for current industrial demands but humans capable of shaping institutions to serve enduring values.

The choice before us is stark. We can continue down the path of specialized vulnerability, training each generation for jobs that will vanish within decades, then expressing pity when displacement comes. Or we

can embrace the wisdom of classical education, cultivating minds that possess intrinsic value and adaptive capacity regardless of technological regime. Tugwell showed us in 1931 that the former path leads only to repeated suffering. Nearly a century later, we have no excuse for ignorance. The question is whether we have the courage to choose differently.

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