



# From Land-Grant Legacies to Equity in Career and Technical Education: A 150-Year Policy History of U.S. Higher Education

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## Abstract

This paper examines the legislative evolution of vocational education policy in U.S. higher education, spanning from the Morrill Land-Grant Act of 1862 to the Carl D. Perkins Act V of 2018. This study employs a historical-interpretive framework to assess five significant legislative measures—the Morrill Act, Smith-Hughes Act, Vocational Education Act of 1963, Vocational Education Amendments of 1968, and the Perkins Acts—focusing on their impacts on institutional identity, equality, and access. The findings indicate consistent duality: vocational education has fluctuated between functioning as a conduit for economic advancement and serving as a tool for social stratification, particularly impacting marginalized groups. Case studies include the racially discriminatory implementation of vocational training in the Tuskegee model, the dual-track framework established by the Smith-Hughes Act, and the augmented function of community colleges subsequent to the 1963 Act and its amendments. The research characterizes vocational education as a transformational influence on postsecondary objectives and workforce development, rather than just a technical supplement to liberal education. The policy implications highlight the need for reintegrating practical learning inside university frameworks, enhancing transfer and certification paths, and augmenting targeted investments in community and technical institutions. This research contextualizes recent CTE changes within a 150-year historical framework, thus contributing to ongoing discussions on social equality, labor-market alignment, and post-secondary access.

## Subject Areas

History of Education, Higher Education Policy, Vocational and Technical Education (CTE)

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## Keywords

Vocational Education, Higher Education Policy, Morrill Act, Perkins Act, Community Colleges, Education Equity, U.S. Education History

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## 1. Introduction

From the Morrill Land-Grant Act of 1862 to the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) of 2018, vocational policy has been a defining yet contested force in U.S. higher education. In this study, “vocational education” refers to the historically rooted systems of occupational preparation, often focused on trades, agriculture, and industrial skills, that emerged in the nineteenth and early twentieth centuries. “Career and Technical Education” (CTE), by contrast, denotes the more recent policy framework, especially after the 1990 Perkins reauthorizations, which integrates academic and technical learning to prepare students for both postsecondary study and direct workforce entry [1]-[3]. While these terms are related, they reflect distinct historical phases and ideological emphases; this paper uses them deliberately to preserve chronological and conceptual clarity.

Despite its persistent presence, vocational education has often been undervalued in academic discourse, cast as non-intellectual or incompatible with liberal ideals, while simultaneously serving as an essential mechanism for expanding access, developing workforce capacity, and shaping institutional missions [4] [5]. Vocational policy has carried a dual legacy: functioning as a pathway for economic mobility and skill development, yet also as a structural tool for social stratification, particularly in its historical application to marginalized communities [2] [6] [7].

This article employs a historical-interpretive methodology to examine five pivotal legislative moments in vocational and CTE policy: the Morrill Land-Grant Act of 1862, the Smith-Hughes Act of 1917, the Vocational Education Act of 1963, the Vocational Education Amendments of 1968, and the Perkins legislation culminating in Perkins V (2018). These moments were selected according to four criteria: 1) National scope and statutory authority; 2) A demonstrable shift in the role of vocational education within postsecondary systems; 3) Long-term implications for equity, access, and institutional identity; 4) Representation of distinct historical eras. While other policies, such as the Servicemen’s Readjustment Act of 1944 (GI Bill), had notable workforce implications, they were excluded because their effects on vocational education were indirect rather than structural.

By engaging with a broad base of scholarship, including the “education gospel” framework [4], historical analyses of community colleges [3], sociological studies of tracking and inequality [7] [8], and policy-oriented research on CTE equity [1] [9] [10], this paper situates the legislative history of vocational education within broader debates about higher education’s purposes. In doing so, it illuminates how shifts in federal policy have alternately reinforced and challenged structural ineq-

unities, shaped institutional missions, and redefined the pathways between education and work.

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## 2. Analytical Approach

The study employs a historical-interpretive approach to analyze the development of vocational and career and technical education (CTE) policies in U.S. higher education. This method highlights how legislation both mirrors and shapes societal beliefs, institutional objectives, and dynamics of equity over time. Rather than experimentally testing causal claims, the historical-interpretive strategy synthesizes legislative histories, policy analyses, and scholarly interpretations to identify recurring ideological patterns and assess their implications for access, workforce alignment, and institutional identity [4].

The research focuses on five legislative milestones: the Morrill Land-Grant Act of 1862, the Smith-Hughes Act of 1917, the Vocational Education Act of 1963, the Vocational Education Amendments of 1968, and the Perkins V Act of 2018. These policies were selected according to four criteria:

- 1) Federal jurisdiction and statutory authority – legislation with national applicability and official capacity to modify the framework or financing of vocational/CTE in higher education.
- 2) Transformative policy alteration – laws that reshaped the role or perception of vocational/CTE in postsecondary systems.
- 3) Prolonged effects on equity and institutional identity – policies that produced lasting influence on participation in higher education, program valuation, and institutional purpose [7].
- 4) Representation of multiple historical periods – spanning the 19th through the 21st centuries to illustrate continuity and change.

Primary sources include full legislative texts, congressional reports, and publications from federal agencies such as the U.S. Department of Education [12]. Secondary sources consist of peer-reviewed research in higher education history, sociology of education, and vocational/CTE policy [11] [13]. These materials provide verifiable timelines while situating policies in their racial, class, and labor market contexts. Particular attention is paid to the Tuskegee model’s racialized vocational framework [2] [14] and to Perkins V’s equity-focused funding priorities [1] [15], both of which illustrate the evolving relationship between policy and marginalized groups.

The main analytical questions guiding this study are:

- In what ways did each legislative event alter the role of vocational and CTE in higher education?
- How did these policies promote or obstruct fairness, access, and social mobility?
- In what ways have historical patterns in vocational policy influenced the current role of CTE within the broader mission of higher education?

Ultimately, this study seeks to demonstrate how vocational education has alternated between functioning as a pathway for economic empowerment and serving as a mechanism of social stratification [8]. By situating legislative analysis within a broader interpretive framework, it provides a historically grounded foundation for contemporary policy debates about equity, workforce preparedness, and post-secondary access.

### 3. Analysis

To understand the roots of vocational education in U.S. higher education, it is necessary to begin with the Morrill Land-Grant Act of 1862. Passed during the Civil War, this legislation granted federal land to states for the establishment of institutions specializing in “agriculture and the mechanical arts” [13] [16] [17]. This represented a major departure from the classical liberal arts model, which had previously dominated American higher education. By enabling public institutions to emphasize applied sciences and technical subjects essential to national growth, the Morrill Act broadened the purpose of colleges and universities to include economic productivity and public service. [13] observed that this shift “opened the doors of the college to the working classes, especially in rural regions”. These land-grant colleges not only provided access to broader populations but also embedded hands-on, experiential learning in agronomy, mechanics, and engineering, laying the institutional foundation for vocational education in the twentieth century.

Parallel to this development, vocational education was also taking shape in racially segregated contexts. The Tuskegee Institute, founded by Booker T. Washington in 1881, promoted vocational training for African Americans, emphasizing agriculture, carpentry, blacksmithing, and domestic trades as pathways to economic independence. Washington believed vocational skills could help Black communities achieve self-sufficiency. However, scholars have debated the ideological roots and consequences of this model. [2] noted that Washington’s approach was strongly shaped by northern industrialists and philanthropists who opposed providing liberal education opportunities to Black students. Similarly, [14] critiqued the Tuskegee model as a limiting framework that reinforced segregation and class stratification. While practical training met the immediate economic needs of the time, it also curtailed intellectual empowerment and opportunities for broader social mobility. Tuskegee therefore reflects how vocational education could simultaneously provide opportunity and impose limitations, par-

ticularly along racial lines [6].

The Smith-Hughes National Vocational Education Act of 1917 institutionalized a more formal dual-track system of academic and vocational education. Though its initial scope targeted secondary education, the Act's funding mechanisms, curricular philosophy, and administrative structures had significant effects on postsecondary institutions [4] [18]. It required that vocational programs be distinct from academic ones and mandated the establishment of state boards for vocational education, a move that entrenched divisions in governance and curriculum. Teacher-training institutions, which were increasingly tasked with preparing vocational educators, absorbed this separation into their program design, shaping teacher education for decades.

This bifurcation influenced higher education broadly. As teacher-training schools evolved into state colleges and regional universities, the divide between liberal and applied learning persisted. [4] argued that this helped solidify a functional hierarchy in U.S. higher education: elite universities prioritized abstract research and professional education, while land-grant and regional institutions assumed responsibility for applied and vocational preparation. The emerging community college sector in the 1910s and 1920s further reinforced this stratification, as many junior colleges adopted terminal vocational purposes shaped by the Smith-Hughes rationale [3]. As a result, American higher education evolved into a layered system, where access to liberal education or vocational training was determined less by student preference than by class-based assumptions about work and learning.

The Vocational Education Act of 1963 represented a major policy shift. While earlier legislation such as Smith-Hughes had largely confined vocational education to the secondary level [19], the 1963 Act expanded federal involvement in postsecondary workforce development. It redefined vocational education to serve not only high school students but also out-of-school youth and adults, in areas such as business, health sciences, electronics, and trade technology [20] [21]. This expansion reflected both economic pressures and a growing recognition of education's role in addressing inequities in access to employment opportunities.

Importantly, the 1963 Act directed federal funds to postsecondary institutions, especially community colleges and technical schools, to expand technical and occupational programs [20]. By emphasizing local autonomy while maintaining federal-state partnerships, it set the stage for later reforms [22]. [4] contended that this law reinforced stratification by promoting a parallel system of institutions oriented more toward workforce preparation than liberal education, but it also laid groundwork for community colleges as central actors in national workforce policy.

The Vocational Education Amendments of 1968 further expanded the scope of vocational education by focusing more directly on disadvantaged populations. The law required states to prepare strategic plans for federal funds, thereby institutionalizing accountability measures [23]. [24] emphasized that the Act estab-

lished advisory committees to align vocational programs with labor market needs, paying particular attention to equity and access. It also approved innovative programs such as work-study initiatives and residential vocational schools, as well as adult education support tailored to the economic realities of learners. These measures advanced the institutionalization of vocational education within higher education and helped create pathways toward lifelong learning and stackable credentials [25].

Two decades later, the Carl D. Perkins Vocational Education Act of 1984 reoriented federal priorities once again. Its central aim was to bridge the gap between access and accountability in vocational education. The Act explicitly targeted underserved populations—rural learners, economically disadvantaged students, individuals with disabilities, and single parents—and required states to submit structured plans and report outcomes to maintain federal funding [26]. Substantial funds were directed to community and technical colleges, enabling them to create new programs for both traditional and adult learners [27]. This shift positioned vocational education not merely as secondary preparation but as a core component of post-secondary opportunity and equity policy.

Subsequent reauthorizations like the Perkins III (1998), Perkins IV (2006), and Perkins V (2018), cemented the pivotal role of community and technical colleges in U.S. workforce development [12] [15] [27]. Perkins III emphasized aligning academic and technical curricula, encouraging the blending of vocational programs with college readiness initiatives to meet labor market demands. Perkins IV built on this by institutionalizing the concept of “programs of study,” designed to create seamless pathways from secondary education through associate and bachelor’s degrees. Finally, Perkins V reinforced the federal commitment by increasing annual funding to nearly \$1.4 billion, fostering employer partnerships, and requiring measurable outcomes such as credential attainment, job placement, and persistence in higher education [12] [15]. Collectively, the Perkins Acts elevated vocational education as a central instrument of equity, access, and workforce development, embedding it deeply within higher education policy frameworks [9] [10].

#### 4. Contribution to Literature

This article expands and synthesizes key strands of scholarship on the history and policy analysis of vocational and career technical education (CTE). Foundational studies, especially Grubb and Lazerson’s “education gospel” framework [4] [28], have highlighted how vocationalism became embedded in the mission of American higher education, often in tension with liberal learning. While their work remains primarily thematic and intellectual, the present study advances their paradigm by situating it within a 150-year temporal policy history, showing how specific legislative interventions institutionalized, and at times contested, the ideological and structural divides they identified.

This research also engages with scholarship on educational stratification, nota-

bly Labaree's analysis of credentialism [8] and Lucas's theory of effectively maintained inequality [7], to demonstrate how institutional structures and tracking systems perpetuate class and racial disparities. By analyzing policies from the Morrill Act to Perkins V, this study provides historical depth to these sociological perspectives, revealing how federal legislation has embedded stratification into the fabric of higher education policy. At the same time, it draws on studies of the education-labor market nexus [11] and political-economic critiques of vocationalism within market-driven reforms [6] to situate vocational policy within broader structural and ideological dynamics.

In addition, this article incorporates scholarship that investigates the integration of academic and vocational curricula as a strategy for equity [9] [17] [18], as well as policy analyses that assess the role of accountability, funding priorities, and pathway reforms in CTE [1] [10]. Together, these studies illustrate both the promise and limitations of federal reforms, particularly in their efforts to address inequality while advancing workforce alignment.

By weaving together these diverse perspectives, this research contributes to the literature by documenting critical legislative milestones in vocational and CTE history while also offering a sustained analysis of their effects on access, equity, and institutional identity in higher education. The result is a historically informed framework that connects past reforms to contemporary debates about postsecondary opportunity, labor-market preparation, and social justice in U.S. education.

## 5. Policy Implications

The historical progression of vocational and Career and Technical Education (CTE) policy, from the Morrill Act of 1862 to Perkins V in 2018, demonstrates that U.S. higher education has persistently grappled with reconciling two fundamental objectives: preserving the intellectual traditions of liberal education while addressing the practical demands of a shifting labor market. This tension has been exacerbated by structural differences in financing, governance, and program design, which have entrenched class and racial disparities in educational access over time [4] [6] [7]. Historical examples such as the dual-track framework of the Smith-Hughes Act and the racially biased Tuskegee vocational model illustrate how policy decisions may either expand or restrict opportunities, depending on their emphasis on equity and integration [2] [14].

### 5.1. Integration of Applied and Academic Learning in the Curriculum

The historical separation of occupational and academic tracks has perpetuated structural inequalities [17]. To address this divide, institutions should embed practical competencies, technical problem-solving, industry-recognized credentials, and experiential learning within general education. Such integration would enable students to gain career-oriented skills alongside transferable academic

credits without redundancy in coursework [29]. Moreover, implementation must account for contextual factors such as teacher workload and absence patterns that can shape program effectiveness [30].

## **5.2. Statewide Articulation and Stackable Credentials**

The Morrill Act's emphasis on access, together with Perkins-era reforms stressing pathways, highlights the importance of building clearly articulated, stackable credentials that link short-term certificates to associate and bachelor's degrees. This requires strong state- and system-wide partnerships between two- and four-year institutions to ensure CTE students are not confined to terminal programs unless they choose to be [25].

## **5.3. Metrics for Accountability Centered on Equity**

Historical inequities, including land-grant exclusions and the chronic underfunding of minority-serving institutions, demonstrate that enrollment alone does not guarantee fairness [2] [11]. Accountability mechanisms should therefore extend beyond participation to measure program quality, wage outcomes, and job placement, while requiring disaggregation by race, gender, poverty status, disability, and geography [1].

## **5.4. Strategic Federal and State Investment in Community and Technical Colleges**

Community and technical colleges have long been the primary sites of CTE delivery and remain pivotal to workforce preparation [10]. To strengthen their role, governments must commit to sustained, need-based funding to modernize facilities, expand programs in high-demand fields (e.g., health technology, renewable energy, cybersecurity), and scale student supports, especially in rural and underserved communities.

## **5.5. Intersectoral Collaborations for Relevance and Accessibility**

Perkins V's emphasis on partnerships offers a model for aligning higher education with employers, K-12 systems, and community organizations [15]. Such collaborations should ensure curricula are responsive to labor market needs while also addressing non-academic barriers, including transportation, childcare, and advising, which disproportionately affect disadvantaged students.

Taken together, these strategies would confront the longstanding structural impediments documented in historical policy and create a more cohesive, equitable, and adaptive postsecondary system. Recent evaluations confirm that well-designed CTE programs of study can simultaneously prepare students for careers and uphold academic rigor [31].

## **6. Conclusions**

This study has examined the legislative and conceptual development of vocational

and career technical education (CTE) in U.S. higher education over more than 150 years, from the 19th-century land-grant movement to the pathway's framework of Perkins V. The analysis reveals persistent duality: vocational education has functioned both as a catalyst for opportunity and as a mechanism of social inequality. While early legislation such as the Morrill Act expanded access for new populations, other measures—most notably the Smith-Hughes Act—reinforced rigid divisions between academic and vocational education, often perpetuating racial and socioeconomic disparities.

Drawing on five significant legislative milestones, this study applied a historical-interpretive framework to situate vocational policy within broader discourses on educational stratification [7] [8], institutional mission [17], and workforce alignment [9]. In doing so, it extends prior scholarships by providing a longitudinal policy analysis that connects historical frameworks to contemporary debates on CTE equity, access, and integration. It also highlights the enduring challenge for policymakers: federal reforms have too often addressed participation without fully dismantling the institutional and structural barriers faced by disadvantaged groups.

The central lesson is that vocational and technical education cannot realize its transformative potential if it remains philosophically, administratively, or culturally detached from liberal education. Genuine equity requires moving beyond the traditional dual-track system to an integrated model in which vocational and academic learning are interdependent elements of higher education.

Given the United States' rapid technological progress, evolving labor-market demands, and persistent social inequalities, the history of vocational policy offers both cautionary lessons and guiding principles. Future CTE reforms must be designed around integration, equity, and adaptability if the postsecondary system is to advance toward the dual objective envisioned at its inception: promoting the intellectual growth of students while also fostering the economic vitality of the nation.

## Conflicts of Interest

The authors declare no conflicts of interest.

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