National Legislation for a New Age of Lifetime Learning: 
Tax Deferred Lifelong Learning and Training Accounts 

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Propelled by a new wave of integrative digital technological innovations that are transforming how people live, work, and interact, the U.S. economy is posed to enter a Fourth Industrial Revolution (i.e., Industry 4.0) (Schultz, 2019). The digital innovations during Industry 4.0 are expected to severely disrupt the U.S. workforce, require workers to continuously upgrade their skills, and usher in a new age of lifetime learning. However, a system of financing access to quality education and training programming is needed to assure equitable access for those unable to afford it (i.e., middle and lower-income workers). National legislation creating Tax Deferred Lifelong Learning and Training Accounts (LLTAs) should be supported by adult educators as a national response to the educational and training related challenges presented by Industry 4.0.

The U.S. Workforce and Industry 4.0

Industry 4.0 is characterized by advances in efforts to create an integrated digital world, and merge both human and machine capabilities (Khan & Isreb, 2018). A wide variety of digital technologies (such as Artificial Intelligence [AI], Cyber-Physical Systems [CPS], genome editing, biometrics, 3D printing, autonomous vehicles, 5G wireless technology, the Internet of Things, and others) are proliferating as they are incorporated into the production and distribution of goods and services (Khan & Isreb, 2018; West,
Improvements in software design make it increasingly possible for machines, using elaborate algorithms, to automate the performance of complex tasks (including jobs) without human intervention.

For businesses and consumers, these developments promise higher productivity and economic growth, increased efficiencies, safety, and convenience; but they also raise unsettling questions about the broader impact of automation on jobs, skills, wages, and the nature of work (Manyika, Chui, Madgavkar, & Lund, 2017). The effects of Industry 4.0 are expected to indiscriminately impact the skillsets of workers (from novices to veterans) (World Economic Forum, 2018). Sixty percent of all occupations will have at least 30 percent of activities that are automatable and may require either worker displacement or retraining (Manyika et al., 2017). The skillsets in both old and new occupations in most industries will likely undergo transformation (World Economic Forum, 2018) as entirely new categories of jobs and occupations will be created, while others will be either partly or fully displaced. Compared to previous economic disruptions, Industry 4.0 will be equivalent to a tsunami on steroids as relentless and rapid waves of digital innovations make obsolete workers’ skillsets. Appropriate national policies can assist the employability of workers in a looming world of dislocation.

**Policy Challenges**

Industry 4.0 can usher in a new movement in adult education and training in which the learning needs of workers will manifest in concurrent waves of digital innovation requiring adults to develop digital skillsets, social and cognitive skills, and other skills that are beyond the scope of automation (Bughin et al., 2018). The pace and depth of innovative digital change will require workers to engage in
continuous training throughout the life-course by participating in educational programs in short spurts when needed (Selingo, 2018). Several Congressional Legislators have responded by presenting legislation which assists workers to pursue lifetime learning opportunities.

**Current Legislation for LLTAs**

Modeled on the Lifelong Learning Accounts Demonstration project implemented by the Council for Adult and Experiential Learning (CAEL) in 2004, a Congressional Bill has been introduced to promote lifelong learning and training among workers. The Lifelong Learning and Training Account Act of 2018 has been presented to the Senate (S.539) and House of Representatives (H.R.7235). It will amend the Internal Revenue Code of 1986 to establish Lifelong Learning and Training Account (LLTA) programs (Warner & Coons, 2018). This legislation creates tax-preferred savings accounts with a government match to assist low and moderate-income workers seeking either job retraining or upskilling over the course of their careers. As a hedge against knowledge and skill obsolescence, the funds will be available for adults throughout their careers.

The LLTA savings plans will be portable from job-to-job, and employee-owned and controlled (Warner & Coons, 2018). Contributions to a LLTA by either workers or their employers will be eligible for a dollar-for-dollar federal match of up to $1,000.00. For example, a $500.00 worker contribution (with a $500.00 employer match) would create $2,000.00 in training funds. The accounts will be controlled by states, and the federal matching funds will be directly deposited into the LLTA immediately after the contribution by either the worker or employer. The worker can then choose how to use the LLTA funds,
which can be applied towards any training that leads to a recognized post-secondary credential. Eligibility will extend to workers age 25 to 60, with incomes of up to $82,000.00 per worker (Warner & Coons, 2018).

**Conclusion and Implications for Adult and Continuing Education**

The LLTA legislation should be supported by adult education professors, practitioners, and graduate students in solidarity with the broad array of the workforce (including white-collar workers with college degrees (Selingo, 2018)), who stand to benefit from its passage. Depending upon the funding, the passage of the legislation could signal a new wave of lifetime learning as millions of workers demand certificate and certification programs targeting the key skills that complement technology (such as teamwork, communication, problem solving, and so on) (Selingo, 2018). Successful programs should use appropriate Industry 4.0 technology to design, develop, implement, and evaluate the delivery of course content and adult learner support services to meet workers’ retraining, employability, and job flexibility needs. However, to mitigate problems of over enrollment, fraud, and abuse (Schuetze, 2007), the national LLTA implementation design should also include Industry 4.0 technology (such as biometrics) to ensure account security, enhanced quality controls, a full business model, a list of qualified providers, and information sharing on unscrupulous providers.

**Desired Impact on Public Opinion or Policy**

Similar to the early alert system that provided dire warnings of a coming global pandemic prior to the outbreak of Covid19, there are similar warnings that digital innovations during Industry 4.0 are expected to severely disrupt the U.S. workforce, require workers to continuously upgrade their skills, and
usher in a new age of lifetime learning. Ironically, the timeline for Industry 4.0 may have been accelerated as business and industry, educational institutions, and other societal institutions have increasingly relied on digital systems to combat the spread of Covid19 infections. It is anticipated this position paper will both increase public awareness of this pending issue and generate support from adult educators and policymakers to draft (and/or support) national legislation to respond appropriately to the educational and training related challenges presented by Industry 4.0.

**Initiator of the Position Statement**

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**Recommendations for Distribution**

It is recommended the AAACE Board distribute this paper broadly to AAACE members and partner organizations. The paper should be posted to the AAACE website, distributed via AAACE social media outlets (e.g., Twitter, Facebook, etc.), and shared with the leadership of our partner organizations with a request that they distribute it broadly.

**References**


