

The 4 E's in Empowering the Future of Work in the Midwest

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Abstract

¹Automation and artificial intelligence are at the forefront of challenges facing the workforce in the Midwest. Applying innovation to educational practices supported by both employers and the public sector is one key to future-prepping workers and reducing precarity. We explore the current state of employment in the Midwest and break down our theoretical equation of “*Employee * (Education + Employer + Environment)*² = a more Empowered workforce,” ultimately recognizing the prioritization of the individual as the most fundamental and important force for transformation in the Fourth Industrial Revolution.

Introduction

The Midwestern labor market faces precarity in the Fourth Industrial Revolution—a time when the growing presence of automation and artificial intelligence threatens to remove millions of jobs from the employment landscape, creating unease and uncertainty as employers shift risks and responsibilities onto the individual (Walsh, 2019). This phenomenon becomes especially present when considering the importance of dignity of labor that places value on all occupations, raising the challenge of finding solutions that diminish precariousness and support the worker.

To have a truly human-centric approach is to strive towards reducing the burden of adapting to rapid and intense transformations in the workplace off of the individual. There exists a widening skill gap crisis: the current workforce is not equipped with the necessary skills to face automation, and traditional education methodologies fail to highlight what is important for lifelong employability. Supplementing reformed approaches to continued education, employees’ efforts to adapt must be supported by their employers and public policy. Together, society will then be able to progress towards the ultimate goal of a more empowered and future-prepped state of labor.

In this paper, we will break down reforms necessary for future-proofing the dignity of labor in education, the private sector, and the public sector of the Fourth Industrial Revolution.

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Our solutions not only call upon statistics on the current state of the Midwest, but also reference the impact of the novel coronavirus (COVID-19) pandemic and what it reveals about education systems, unemployment, and dignity of labor. Through analyzing society's response to sudden changes and challenges, we will be able to better plan for the impending shift and transformation of the employment landscape in the 21st century.

Education

The advantage humans have over artificial intelligence (AI) and developing automation technologies is the ability to think flexibly and problem-solve dynamically. In order to future-proof the roles of human workers, education must be redefined in a way that encourages the development of soft skills and continued curiosity. This process of learning should be enhanced through the endorsement of alternative forms of education, use of intelligent technology, and emphasis on the importance of psychological safety in an educational setting.

Alternative Higher Education

First and foremost, we suggest promoting alternative forms of higher education and deviating from the necessity of a traditional four-year degree. Apprenticeships, technical schools, dual enrollment, community colleges, and particularly online learning platforms are some examples of higher education alternatives that could mitigate the effects of the Fourth Industrial Age. However, their impacts can be limited if the public and private sectors fail to recognize value in non-traditional learning. While a traditional four-year degree may signal a higher status or employment expectation, rising tuition and other costly considerations can hinder accessibility. There was an overall average decline of -1.3% in postsecondary enrollment, while the Midwest had an average of -2.13% change with Missouri declining the most by -4.4% (NSC, 2019). This consistent decline signals the need for employers to accept alternative demonstration of skills and learning ability. One very viable option is through the decreasing cost and organic growth of online certifications(Koksal, 2020).

The popularity of Massive Open Online Courses (MOOCs) in light of COVID-19 can serve as an indicator of a need for accessible alternative education. MOOCs are low-cost, smaller modules of education meant for a wide range of audiences, oftentimes created by accredited universities through internet platforms such as Coursera or edX. Between the mandated quarantine periods of March 17 and April 16, Coursera reported an increase of 607% in U.S. enrollments compared to the same period last year(McCluskey, 2020). Microcredentials, or digital certificates indicating proficiency in a specific skill or skill set, are awarded upon completion instead of traditional college credits. In a survey of American workers, 60% preferred non-degree credentials and skill-based education programs as opposed to completing a traditional college degree(SEN, 2020). Higher MOOC registration levels could indicate a need to

shift measurement of education from credits earned to one that instead awards relevant skills learned or business impact created.

Personalized Education

Artificial intelligence, although a driving force behind the need to upskill human workers, can also be leveraged to benefit continued education. Hyper-personalization in learning can be incredibly beneficial through utilizing an increasing wealth of data on learning habits. Machine learning can recognize patterns of behavior, aid in the creation of targeted programs, develop teaching schedules or methods, and even provide feedback and assistance based on what works best for each individual employee and their learning needs. There is no longer a one-size-fits-all model for education, and better integration of AI and machine learning grows increasingly important as learning takes a more digital format.

Personalization can also come in the form of determining which skills are most critical to learn for the individual. In 2018, Deloitte reported that the growing skill gap in manufacturing, a dominant and high-risk industry in the Midwest, could result in an estimated 2.4 million positions unfilled and a loss of \$2.3 economic output in the next decade (Giffi *et al.*, 2019). As traditional manufacturing roles are phased out, workers will need to transition into new career pathways assisted by digital tools. Necessary skills constantly evolve to match the dynamic shifts in workplace roles. Personalization can allow for more targeted learning and better use of time. Training in all institutions should focus on the application of what is learned in a real-world context and align with the skills and method of learning to what each individual needs to excel.

Psychological Safety

A study performed by the World Economic Forum reported that creativity will be a top-three skill in 2020, with other uniquely-human skills like emotional intelligence and critical thinking also topping the list (Gray, 2016). However, practicing these skills, and other technical skills presented in today's modern employment landscape, requires that the learner is motivated and feels psychologically safe to take risks in learning. This is especially true in times of crisis or uncertainty such as the COVID-19 pandemic, where it is imperative employees and learners feel supported. Leaders, mentors, and coaches should demonstrate empathy towards individuals, focusing on well-being and constant communication to create an environment of understanding and willingness to take risks (Richards, 2020). Their involvement and vocal support in the upskilling experience can encourage more effective learning. Additionally, peer study groups build relationships and stimulate the parasympathetic nervous system, which can help people develop soft skills, process more ideas and learn more compared to working alone (Davies *et al.*, 2019).

Finally, education must foster an environment of curiosity and self-motivated learning without enforcing metrics that can hinder risk-taking or exploration. In some ways, this calls for the reconsideration of traditional grading practices. For example, in 1969 Brown University eliminated the calculation of Grade Point Average to encourage students to seek new areas of study without fear of failure (Brown University, 2004). Today, gamification is another new approach to education that uses game-inspired behavior-motivating techniques to attract and retain the attention of learners (Gutierrez, 2016). Gamified grading fosters goal-creating skills as students aim towards a cumulative point total through a variety of assignments and assessments, the number of and method to achieve those points determined by the student themselves. The cumulative total also serves as measurable and timely feedback on the progress towards their goal. This technique not only promotes self-motivated learning but can also challenge learners to combine both intrinsic and extrinsic motivation in engaging with education and develop more long-term habits for lifelong employability (Muntean, 2011).

Employer (private sector)

Unlike the online education revolution that has spread beyond regional constraints, private sectors are more local. When it comes to preparing for the future, from physical location to employee pool, companies in the Midwest will require a more geographically focused analysis. We propose that employers foster an environment of continual learning to combat an imagery disadvantage i.e. a negative impression that employers in the Midwest may face. Two directions of expansion are suggested: vertical transformation internally within the company, and horizontal transformation across businesses and industries.

Current State of Manufacturing in the Midwest and Problem Identification

Historically, the employment makeup of the Midwest has been concentrated in manufacturing (Figure 1). For this reason, we focus our analysis on employers in the manufacturing industry.

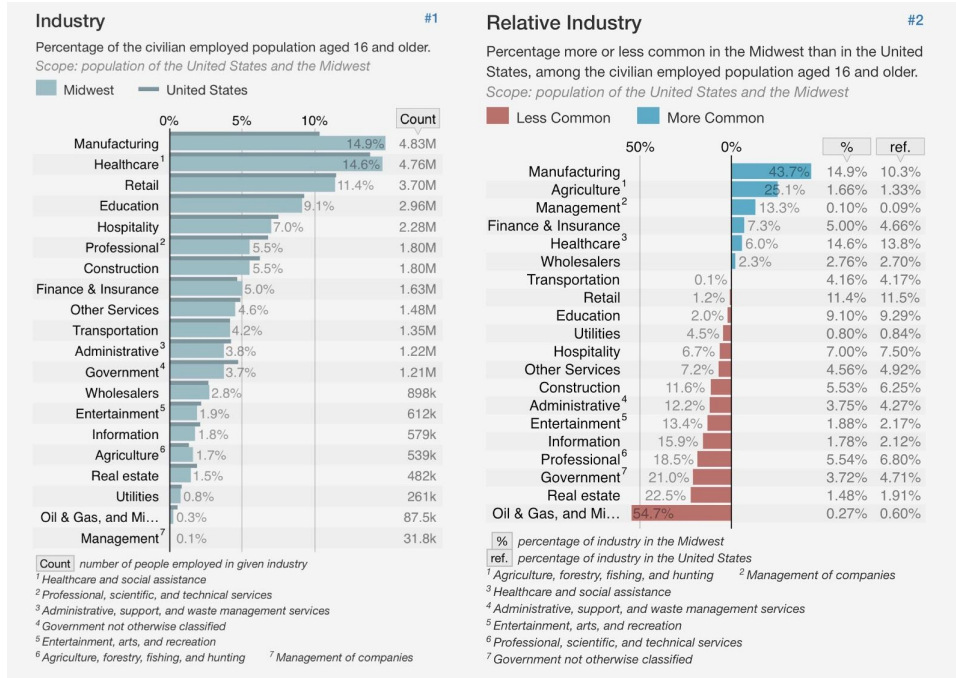


Fig.1. The percentage of employment and relative percentage compared to a national figure in manufacturing are both on the very top

The Midwest dominates the national manufacturing sector. Noticeably, however, from 2000 to 2018, manufacturing employment growth significantly lagged behind other parts of the country(Figure 2).

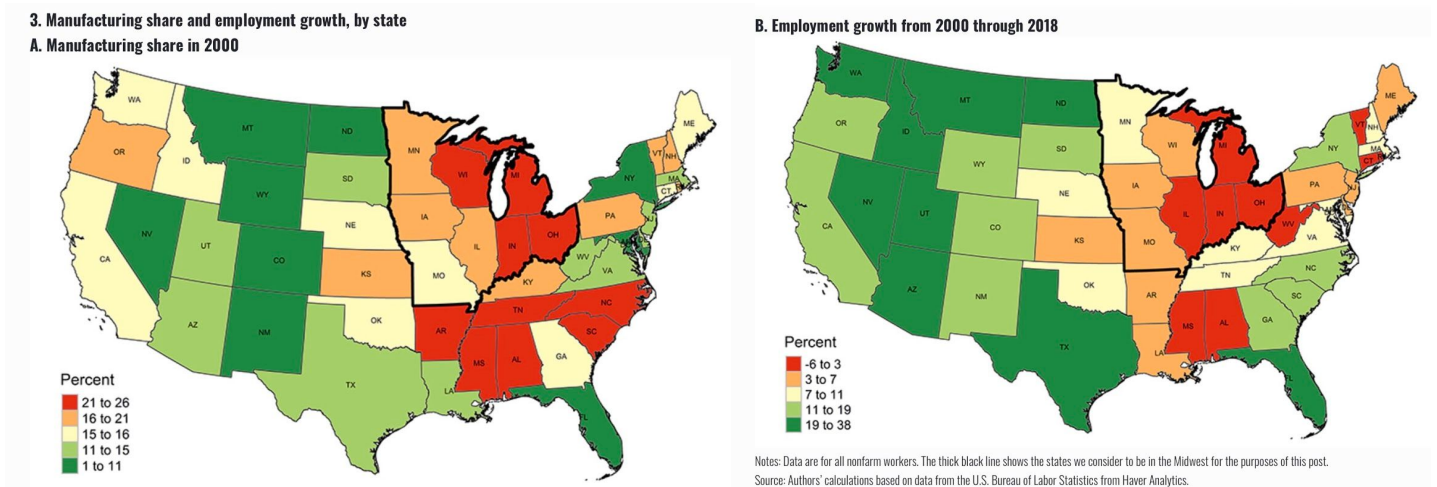


Fig.2. While the highest range of manufacturing share still lies in the Midwest, employment growth in the industry has been placed in the lowest range for roughly the same area

The manufacturing workforce mainly consists of college graduates(TMI, 2014), yet statistics show that from 2000 to 2015, the Midwest generally was losing more college graduates to other regions than receiving them(Bui, 2016). Here we propose one major culprit might be a negative industry image. According to a report surveying the public’s view of U.S. manufacturing by Deloitte and the Institute of Manufacturing, “Americans are reluctant to choose careers in manufacturing.” (Gifford et al., 2020) A third of American parents would not encourage their children to step into the industry, mainly because of concerns for stability and less promising prospects.

On top of the general perception, the World Economic Forum also indicates that a company’s geographic location is important in attracting young people (WEF, 2019). These combined could be an alarm bell for manufacturing employers in the Midwest, compared to those in more prospering regions along the coasts.

To combat the regional and imagery disadvantages that employers in the Midwest may face, we further propose that employers could foster a lively environment of continual learning in a vertical manner or a horizontal one. And not only will this culture change approach help businesses recruit more next-generation talents, it could also be cost-effective. According to the World Economic Forum, “the private sector could profitably reskill 25% of all workers, a figure rising to 45% if businesses collaborate”, which highlights a promising return aspect of this employer-centric approach(WEF, 2019).

Solution 1: Vertical Change

To usher in a learning culture vertically, employers might proactively take stock of the business development plan, examine the skill gap, pinpoint absent capabilities, and design future-oriented learning strategies. One example of a successful transition is the thriving German software corporation SAP. The company first conducted a thorough analysis of its future product portfolio and quantified a skills gap in how many more talents will be needed in advanced programming. Then they mapped out a collection of end-to-end “learning journeys” curated to different new roles in need, including reading materials or online training courses provided in-house. Finally, current employees underwent on-the-job training coupled with coaching for several weeks in order to fully prepare them for their new tasks(MGI, 2018). SAP’s transition also provides a concrete possibility for manufacturing companies to create real-world contextual alignment. Employers can start from the endpoint—business priorities in the short future, derive visible “curricula” from the top-down, and bookend it by hands-on in-person practices. When the formidable skill gap is translated into a clearly-delineated learning path, it is encouraging and empowering for current workers and next-generation talents. Once uncertainty is replaced by the necessity of learning, career stability will be in individuals’ control.

Solution 2: Horizontal Change

Manufacturing employers may also seek inter-industry and inter-company learning opportunities to facilitate a horizontal learning culture. According to the World Economic Forum, “the private sector could profitably reskill 25% of all workers, a figure rising to 45% if businesses collaborate,” which highlights a promising return aspect of this approach(WEF, 2019). One successful example is the employee exchange program between P&G and Google. In 2008, the 24 talented employees were swapped from both sides to immerse in the other company’s operations and business meetings. P&G’s employees came back with a better understanding of digital skills and internet marketing initiatives, and Google’s gained clearer insights into consumer goods companies and explored marketing partnership possibilities(WEF, 2019). Although learning horizontally from other similar companies could be enough for adopting new thinking styles, learning from other industries may shore up weak spots with a larger marginal benefit. This is especially interesting for manufacturing companies that might want an image overhaul. They may partner with internet or social media analytics companies and launch marketing campaigns more effectively with professional outside evaluations, and in return provide industry-specific data and insights or other partnership proposals. Next-generation talent may also be attracted by the multidisciplinary dynamic and work culture.

Environment (public policy)

As seen from previous outlined examples and propositions, employees are able to benefit much from internal training programs. However, without access to a formal organization, the unemployed will need government support. In this paper, we regard the external environment outside of established companies as a whole, primarily in service for people who have yet to land a job bundled with benefits. In this line of thought, we argue that public policies focusing on social safety net programs will empower the group that temporarily fall outside of workplaces.

Unemployment Trends

Weekly initial unemployment insurance claims across the country have ramped up around twenty-fold amidst COVID-19, and that of Michigan has also grown ten times within weeks(RSQE, April 2020).

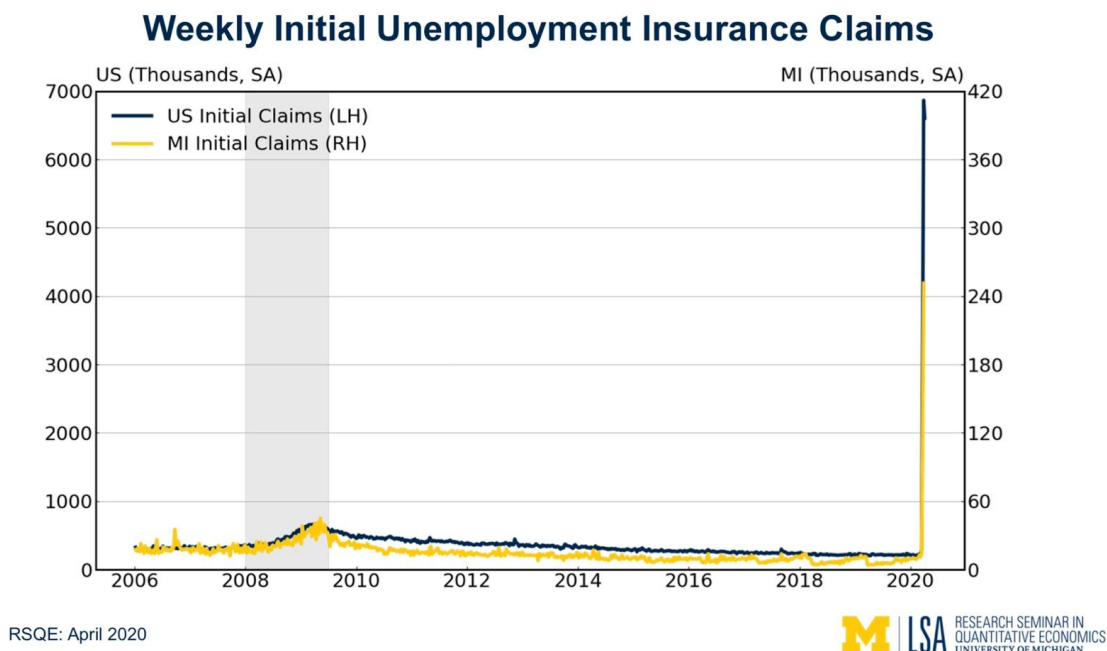


Fig.3. Up to mid-April, initial Unemployment Insurance Claims have risen above 240 thousand

During this time, employment is a blessing as economic recession brings excruciating uncertainty and precarity. Yet similar to the job market upheaval brought by globalization in trading and internet, the pandemic is beyond any individual's control and is something to eventually come to terms with. We can further extend this logic to the future of automation, a time when digital adoption inevitably sweeps across industries like globalization and a pandemic.

Past Government Responses

There are two common threads throughout the relief programs created by the public sector in order to address recent crises: reemployment services and eligibility expansion.

Responding to pervasive globalization, the U.S. federal government launched the Trade Adjustment Assistance program in 2002 to provide aid for workers losing jobs due to increased imports (DOL, 2020). The most salient part of this program is a broad range of reemployment services, including job training, income support, and relocation allowances. Petition grantees can obtain career services like skill assessments and individual employment plans. If the grantee is enrolled in a full-time training course, s/he may be eligible for additional weekly cash payment during the transition. During the pandemic, the same program seems to be expanding its eligibility scope. While COVID-19 impact is not a basis for TAA certification, "workers of firms impacted by closure or work-stoppage may be eligible to apply for TAA if the worker group eligibility criteria are met." (DOL, 2020)

Workers who file for Unemployment Insurance (UI) will receive monetary benefits and also work closely with the “one-stop” Employment Service Office that provides “a wide array of re-employment services free of charge,” including training programs and job opening referrals (DOLETA, 2019). With the pandemic, there have been discussions about UI’s eligibility limitation. One particular point of criticism is the income threshold: individuals must meet a minimum level in a roughly one-year “base period”(DOLETA, 2019). Therefore to file for benefits, individuals might have to be consistently employed in the previous year to receive enough salary and reach the income bar. This poses a challenge for those that already experienced a long term of unemployment or worked part-time(Brookings, 2020). For now, this disadvantaged group mainly covers low-wage workers or people with minor disabilities, but it could also extend to workers displaced by machines in the future.

Strengthening Previous Policies

Reemployment services and eligibility expansion could also be applied to relief programs targeting the involuntarily unemployed due to automation, but with a slight caveat. When automation begins to seep into industries over a more expansive period of time, it will be as necessary to retain and strengthen reemployment services included in an automation assistance program. The public sector can additionally reduce re-employment turnover if it invests in the private sector to provide updated learning necessary for continued employability. With a booming online education market, governments could partner with individualized learning platforms that may yield more closely-matching training-working results in the short term.

Perhaps the government also needs to adjust eligibility scope in the preexisting relief program(West, 2018). Unemployment causes might be expanded to include technology disruptions like unexpected displacement or mismatching skill gaps. Also, income thresholds may be lowered significantly or even lifted altogether in some heavily-struck industries. The reasons for doing so are first, to keep pace with the rapid rate of technology adoption(Henry-Nickie *et al.*, 2019), and second, to grant time and stability. Reskilling can not be reached in one fell swoop, and requires more patience for the displaced workers to think, explore and leap, while making them feel safe and manageable. More tangibly, expansive financial support and investment is another approach. Right now, the State of Michigan requires a total base period wages of \$20,458 at the minimum, plus having wages in “at least two calendar quarters in the base period”(DLEO). We believe that these requirements will have to change in the future in order to accommodate for the faster pace of skill transformation and learning. For example, 2 calendar quarters may be too long, especially when the majority of online programs could be finished in a couple of months, if not weeks. However, taking into account government budget limitations, more sophisticated algorithmic models will be needed in determining a feasible and gradual change.

Conclusion

Education, employer, and environment are critical components to the empowerment of the individual. The three domains can either serve as a source of support and motivation or as a major deterrent to workers' continued curiosity and learning depending on coordinated efforts towards progress. As such, we synthesize our main points into a theoretical equation:

$$\text{Employee} * (\text{Education} + \text{Employer} + \text{Environment})^2 = \text{a more Empowered workforce}$$

The individual is the fundamental building block of society. A human-centric response to this widespread societal issue is to recognize that the workforce consists of individuals, and therefore the entities which rely on the workforce must work collaboratively to address needs at the individual level. There must be cohesive efforts by the private and public sectors to change the state of alternative and continued education, which will have an exponential impact on the individual employee. The broader goal is to provide meaningful work for all people, achievable by putting the human at the center of discussion and consideration. Only in an absence of precarity will there be a change in the future employability and empowerment of the labor market.

Figures

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