

AN EDUCATIONAL CASTE SYSTEM: INTERGENERATIONAL LITERACY AND SOCIAL MOBILITY IN THE UNITED STATES AND GERMANY

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ABSTRACT: This paper investigates the claim that the United States and Germany have an “educational caste system” and explores how two countries with different educational and social structures could develop a problem of low intergenerational literacy and its consequence, limited social mobility. The paper contrasts Germany’s vocational education system with the United States’ general education system with attention paid to the adaptability necessary to succeed in the 21st century. The Great Gatsby Curve is also discussed as it expresses how levels of income inequality within a nation lead to lower levels of social mobility. Additionally, the concept of cumulative advantage in adult education in Germany and the United States is examined. Ultimately, it is possible to see how two nations with different education systems could arrive at the same problem. The paper concludes that there is a need for more research into adult education trends, more established pathways between adult basic education and vocational education and formal university study, and a general shift in policy to recognize some of the long-term weaknesses of vocational training.

Lunze and Paasche-Orlow (2014) have levelled the heavy claim that the United States and Germany have effectively established an “educational caste system” (p. 17) and have argued that there is limited opportunity to for social mobility through education in these countries. Their accusation has its basis in the results of the Program for the International Assessment of Adult Competencies (PIAAC) survey released in 2013. Of the 24 countries that had taken the survey between 2008 and 2013, Germany and the United States both had mean literacy scores of 270, slightly below the international average score of 273 (OECD, 2013). With new data from eight additional countries available in 2016, the international mean literacy score has dropped to 267 (OECD, 2016), and the United States and Germany have risen above the average; however, applied analysis of the data from the 2013 PIAAC survey substantiates Lunze and Paasche-Orlow’s claim.

Besides their identical literacy scores, Lunze and Paasche-Orlow (2014) highlight two other important similarities between the United States and Germany based on analysis of the 2013 PIAAC results. First, the connection between self-reported health and low literacy scores was four times higher in the United States and Germany than other countries. Second, while data from all countries demonstrated that a strong predictor of a respondent’s literacy score was his or her parents’ educational attainment, the link between parents’ education and the respondent’s literacy score was strongest in the United States and Germany. It bears noting that the PIAAC also tested numeracy and problem-solving in technology-rich environments; however, Lunze and Paasche-Orlow’s commentary narrows analysis to literacy and the focus of this paper will remain specifically on the literacy score. The main purpose of this paper is to examine the link between parents’ education level and educational and labor outcomes in their children’s

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adult lives within the unique contexts of the United States' and Germany's educational and economic systems.

What remains to be explored is why Germany and the United States stand out and stand together as countries with an educational caste system. These nations have very different approaches to education. The U.S. has a strong focus on general education, and Germany has a well-established vocational education tradition (Deisser, 1999, July; Hampf & Woessmann, 2016; Krueger & Kumar, 2004). However, both are among the world's richest economies. According to 2015 figures from the World Bank, the United States had the world's largest GDP while Germany has the fourth largest, though it bears noting that the United States' GDP is four times that of Germany (World Bank, 2017, April). Further, despite some increase in income inequality over the last two decades (Biewen & Juhasz, 2012), Germany maintains low income inequality as compared to the United States. As measured by the Gini coefficient, Germany has significantly lower income inequality with a coefficient of .292 as opposed to the United States' .394 (OECD, 2016, November). This difference in income inequality makes it even more puzzling that Germany is lumped with the United States, as it is hypothesized that nations with greater income inequality have more limited intergenerational economic mobility, a correlation that has been, with literary flare, dubbed the Great Gatsby Curve (Krueger, 2012, January).

To explore the complexity of how this alleged educational caste system developed in the United States and Germany, this paper will discuss vocational versus general education, the Great Gatsby Curve, and the concept of cumulative advantage. While this still may not provide a complete picture of why these two countries demonstrated limited social mobility through education, it will show how the same situation can be arrived at through different educational systems.

Vocational and General Education

The United States is classified as a non-vocational country while Germany is not only a noted vocational country but an apprenticeship country where education is often composed of a dual system of schooling and work-based vocational programs (Deisser, 1999, July; Hampf & Woessmann, 2016). Two other recognized apprenticeship countries are Denmark and Austria, both of which have Gini coefficients lower than Germany (OECD, 2016, November) and scored within one point of the literacy score of the United States and Germany, 271 and 269 respectively (OECD, 2016). While in-depth analysis of other apprenticeship nations is beyond the scope of this paper, it bears noting that Denmark has begun a process of modernizing its system to allow greater flexibility in its vocational programs which shields it from some of the types of criticism leveled against Germany's vocational education system in the last two decades (European Center for the Development of Vocational Training, 2012).

One of the principal criticisms of vocational education is that it does not have the same ability to adapt to the rapid changes wrought by increased globalization and rapidly advancing technology (Hampf & Woessmann, 2016; Krueger & Kumar, 2004). Merriam

and Bierema (2014) have alleged that most professional preparation is outdated before one is even established in a career. Krueger and Kumar (2004) have suggested policies favoring specialized, vocational education may have been effective fifty years ago, but the information age has transformed the pace of innovation and those who do not have the skills to adapt may be found at a distinct disadvantage. They posit that “only workers with general education can operate new, risky technologies, whereas vocationally trained workers are more efficient in operating old, established technologies” (p. 168). These arguments favor the widespread adoption of 21st century skills as elaborated upon by Dumont and Istance (2010) to include “deep understanding, flexibility and the capacity to make creative connections” as well as “a range of so-called ‘soft skills’ including good team-working” (p. 20). Given these conditions, it is possible that Germany’s emphasis on occupational training within its secondary education programs and adult and continuing education (EAEA, 2011) is contributing to limited social mobility.

Hampf and Woessmann (2016) conducted a study using the PIAAC survey data from 16 countries, including the United States and Germany, to assess the impacts of vocational and general education on employment over the life-cycle. Their analysis concluded that initially, young adults who complete a vocational education program are more likely to be employed. At age 16, those with a vocational education are 10 percent more likely to have a job than those with a general education. However, over the life-span, the percentage decreases with Hampf and Woessmann’s work indicating that at age 48 there is a shift and those with general education are more likely to be employed. The cross-over age was as low as 44 when the data was adjusted to include only Germany, Austria, and Denmark, the three apprenticeship countries. Further, when the data was isolated for the six non-vocational countries, the United States, Japan, Korea, Spain, the United Kingdom, and Ireland, there were no differences in the likelihood of employment across education types. This data would suggest that the opportunity to obtain both vocational and general education would yield the best lifetime benefits for learners. However, in Germany, despite recent reforms to attempt to create pathways from vocational education and training to academic or general education, few learners who take a vocational path ever enroll in general education (Fazekas & Field, 2013).

The United States’ approach to vocational education is most apparent in postsecondary learning. Patterson and Paulson (2016) note that adult learning in the United States is frequently job-related and undertaken to “enhance job skills or career prospects” (p. 7). Kuczera and Field (2013) state that postsecondary vocational training offerings are common in the United States, but that three barriers prevent learners from attaining vocational credentials or other postsecondary education. The first is that many high school graduates lack the level of basic skills of graduates in other OECD countries. Secondly, the decentralization of vocational training opportunities can confuse the process of choosing what type of educational program to pursue. Third, the financial risks of pursuing any type of advanced education, collegiate or vocational, can hinder participation. While generally in the United States, those with university qualifications have much greater earning potential than those with a high school degree or below (Jerrim & Macmillan, 2015; Patterson & Paulson, 2016), the upfront cost of postsecondary education of any type can be prohibitive. The average annual college

tuition fees are above \$US 6000 a year in the United States and other countries with high income inequality. In Germany and other lower income inequality nations, annual college tuition is under \$US 2000 a year (Jerrim & Macmillan, 2015).

It is apparent that Germany's apprenticeship vocational education model and the United States' general education model are distinctly different; nonetheless, each has elements that, in an evolving world, could serve to limit intergenerational social mobility. If we consider the case of Germany, a parent with only vocational education may have had ample employment several decades ago, but the advancement of technology could have influenced their probability of holding a job which could in turn hinder the resources they can invest in their children's education, perpetuating low intergenerational social mobility. In the United States, the case for parental education affecting their offspring's educational attainment is more cut and dry. Over the past thirty years, the earnings inequality between United States college and high school graduates has more than doubled (Patterson & Paulson, 2016) while tuition costs are among the highest in OECD nations (Jerrim & Macmillan, 2015). This situation makes it generally difficult for children of parents lacking college diplomas to shoulder heavy financial burden of a four-year degree even though there have been proven financial advantages upon completion. These inequalities will be discussed in greater detail as this paper examines the Great Gatsby Curve and cumulative advantage.

The Great Gatsby Curve

The Great Gatsby Curve is, at its heart, a simple concept. Countries that have larger gaps between the wealthy and the not-so-wealthy have limited intergenerational social mobility. The term was first coined by labor economist Krueger (2012, January) as he explained the correlation between a nation's income inequality and limited opportunity for social mobility as expressed by plotting a country's Gini coefficient on the X-axis and income mobility across generations on the Y-axis. The data definitively shows there exists a distinct connection between inequality and limited social mobility, as expressed through increased income across generations. In the context of the United States, this correlation has been used to advocate for policies that support greater income equality. Arguments against changing policies to favor lower economic strata are typically predicated on the idea that inequality is justifiable if through hard work, anyone can move up. *The Economist* (2013, July) charmingly put it this way: "If today's burger-flipper can become tomorrow's prosperous burgher with a little grit and hard work, society is still fair" (par. 3). Unfortunately, there is mounting evidence that if the burger-flipper's parents were poor, there is little hope for advancement.

The United States' educational caste system can be much more easily explained using the rationale of the Great Gatsby Curve than Germany's can. In the *Economist* (2013, July) article Germany is touted as an example of a nation with low economic inequality. Germany's Gini coefficient is in the lowest third of OECD countries, and well below the OECD average of .318 (OECD, 2016, November). This raises new questions regarding the strength of the correlation between parents' education and respondents' literacy score on the PIAAC survey in Germany. Could certain vocational training provide lucrative

employment outcomes with minimal literacy education? Is this correlation indicative of vocational education's inability to adapt to changing technology? A thorough answer to these questions is beyond the scope of this paper; however, the analysis of the data from the PIAAC survey begs further inquiry of these questions.

Jerrim and Macmillan (2015) utilized the data from the PIAAC survey up to 2013 to examine "the cross-national relationship between parent education, educational attainment of offspring, and labor-market outcomes, and whether stronger associations are found in societies with more income inequality" (p. 506). Their study yielded a myriad of interesting results. However, the United States and Germany, in most cases, were not clustered together. For example, the data indicated that the United States had the highest estimated difference in earnings between individuals from low and high parental education backgrounds, with those individuals whose parents have low educational backgrounds earning up to 75 percent less than those whose parents had high levels of education. In Germany, there was only a 27 percent difference, which was near the middle, just above the Nordic countries (Jerrim & Macmillan, 2015). However, the United States and Germany were ranked first and third respectively with regards to the wage returns to university qualifications and standardized years of schooling. According to the data, in the United States, someone with a university degree can expect to earn 107 percent more than someone without a degree. In Germany, the university graduate earns 76 percent more (Jerrim & Macmillan, 2015). This is particularly interesting considering Germany's strong emphasis on vocational training and the limited pathways from vocational education to academic education. Clearly, there are significant financial yields to obtaining a university degree in both Germany and the United States and eliminating barriers to bachelor's degrees and beyond could potentially ease some inequality.

Cumulative Advantage

The high association between parental education levels and PIAAC respondents' literacy scores provides an illustration of inequality as discussed with the Great Gatsby Curve. A further perpetuation of inequality occurs through the process of "cumulative advantage." Hugonnier (2007) touches on the idea of cumulative advantage as he explains:

while low-skilled workers and the unemployed may be expected to benefit first from continuing education, exactly the contrary actually prevails. This is in part because employers spend more resources on training their highly-skilled, already well-educated employees than they do on training those with lower skills and less education (Hugonnier, 2007, p. 142).

Kilpi-Jakonen, De Vilhena, and Blossfeld (2015) substantiate Hugonnier's claim through a study that analyzed data from 13 countries, including the United States and Germany, to assess inequities and the presence of cumulative advantage in participation in adult education. The data yielded evidence that showed cumulative advantage was more pronounced in non-formal learning than in formal (e.g. university) learning. The stronger correlation with non-formal learning was attributed to non-formal learning most often being job-sponsored.

Currently, adult educational opportunities are tightly bound to employment. In the countries for which PIAAC data is available, the data has shown that 80% to 90% pursue education for a job-related reason and that employers finance between 60% and 85% of adult learning. Countries with a higher percentage of employer sponsored learning result in higher reported participation (UNESCO, 2016). This employment-based learning is most likely a result of the rapidly changing pace of technology where staying relevant in the market is tied to evolving as a company and continuous learning. Merriam and Bierema (2014) cite that American company Hewlett Packard estimates that a degree in engineering becomes outdated in 18 months because of how quickly technology advances in the engineering field, making additional formal or non-formal learning essential.

However, Germany and fellow apprenticeship country, Denmark, were notable exceptions to the concept of cumulative advantage. The research found that adults in these two countries with postsecondary degrees were *least* likely to participate in non-formal learning. Kilpi-Jakonen et al. (2015) conclude, “these particular results can be explained by the lower importance of non-formal learning and the strong country-specific links between certificates and job positions” (p. 536). This is also interesting to consider in light of Jerrim and Macmillan’s (2015) research that show high returns for obtaining a university degree in Germany. However, this lack of continued non-formal education rekindles the question of whether Germany’s career-focused educational system has capacity to adapt to the rapidly changing technologies in a globalized world if there is limited opportunity for continuing education. Perhaps, the fact that those with advanced degrees were the least likely to participate in non-formal learning means that lower skilled Germans are being targeted; however, the perpetuation of low literacy across generations hints that this is either not the case or is not effective.

The conclusion of Kilpi-Jakonen et al. (2015) is that higher participation rates in adult education do not necessarily lead to lowered social or economic inequality unless there is equity of access. They further contend that national and international educational policy’s emphasis on increasing participation in adult learning does not adequately take into consideration social inequities and thus, rates of participation does not benefit adults at a disadvantage. Their conclusion supports the theory behind the Great Gatsby Curve and provides additional insight into how the structure of adult education can allow low literacy levels to persist into adulthood. However, their work does leave questions about Germany and the impact of its career-focused educational system on lifelong learning opportunity.

Conclusion

The United States’ entrenched social inequality is well established and has even garnered immense attention over the last decade, particularly in wake of the economic recession of 2008 and the Occupy Wall Street movement. However, Germany is not an intensely stratified nation. The fact that these two countries stood apart from other nations included in the results of the 2013 PIAAC survey as having the strongest correlation between parent education and respondent literacy level could be considered “par for the course” in the United States but should possibly be heralded as warning signal for Germany. In the

case of both nations, the emerging analysis of data from the PIAAC survey prompts consideration as to how adult education research, policy, and practice can evolve.

When the results of the PIAAC were published in the United States, a spate of news articles were published including the one by the *Huffington Post* (2013) that ran with the headline “The U.S. Illiteracy Rate Hasn’t Changed in 10 Years.” Adult literacy in the U.S. has previously been measured by the National Adult Literacy Survey (NALS) that was last administered in 2003. It had been a decade since nationwide data on adult literacy had been collected. Dedicating more resources to more frequent research into trends in adult learning could provide insights as to how adult illiteracy rates can be reduced. The efficacy of existing literacy programs could be studied in greater detail and more research could be conducted on diverse delivery methods. Further, research into how to create pathways from basic adult education and vocational programs to university study may serve to raise generations in the Germany and the United States out of the educational caste to which they are born.

Additionally, a shift in policy could benefit both the United States and Germany. Often vocational education is touted as the best way to immediately improve employment outcomes for adults. In the Global Report on Adult Learning and Education survey countries were asked to consider which types of adult learning and education might most positively impact employment. The top ranked answer was “Initial vocational education and training” (UNESCO, 2016, p. 95). However, the pervasive separation of vocational and university education is perpetuating systems that place learners on different tracks. One—general university training with an emphasis on 21st century skills—creates workers that can adapt to changing practices and advancing technology. The other—limited vocational training—creates workers trained in one expertise that may not be able to withstand the tides of change. Educational policy also needs to address economic inequity and advantages. Education is too often considered a panacea for social ills. Unfortunately, the Great Gatsby Curve and cumulative advantage illustrate that educational opportunities must work in tandem with systemic social changes to ensure better outcomes for those starting at a social and educational disadvantage.

The reality of how increasing income inequality is limiting social mobility across generations—expressed by the Great Gatsby Curve—must be addressed. Education is a key component in ensuring employment and social mobility, but education does little good in this regard when it cannot be accessed by those most disadvantaged. The vocational nature of education in Germany and the prohibitive cost of college in the United States limit accessibility and perpetuate systems of inequality. This paper may raise more questions than it answers, but those questions may provide insights into how to eliminate educational caste systems and low intergenerational literacy in the United States, Germany, and beyond.

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