

Racing to Reform in the United States and Germany

by Shana Kennedy-Salchow and Rita Nikolai

Both Germany and the United States have made significant reforms over the last decade to their secondary school systems. This article compares the reforms focused on at-risk secondary school students in both countries and explores emerging trends in achievement and attainment data. The authors conclude that both countries have made significant education reforms and improved the educational results for at-risk students.

Introduction

Secondary schools in both Germany and the United States have just endured a decade that can best be labeled as reform-intensive. In both education systems teachers and school leaders feel as if they are on a treadmill of reforms. In Germany, the treadmill seems to have started off on a sprinting pace since the “PISA Shock” of 2001. In the United States, schools have been on a bit of a reform marathon since the release of the influential 1983 report, *A Nation at Risk*, which warned that the U.S. education system was being eroded by a “tide of mediocrity” (National Commission on Excellence in Education, 1983). The pace of U.S. reforms increased rapidly since the passing of the No Child Left Behind Act and the federal Race to The Top competition.

In addition to their plethora of recent education reforms, the United States and Germany provide interesting cases for comparison as there is a high degree of decentralization in the governance of education in both countries, and each has large gaps in educational achievement as demonstrated on international assessments such as PISA (OECD 2001).

With both countries making major reforms at a quick pace, we were interested in learning about the major educational issues each country was facing and how Germany and the United States reformed their secondary education systems in response to these issues, especially for the lowest performing students. Or in running terms, what challenges and hurdles did they face and what was their strategy for getting over them?

To answer these questions, we start off with a brief overview of the overall governance and structure of the German and American school systems. Then we focus on the major academic problems the countries were facing in the early 2000s including: high proportions of students with low-level reading abilities, students with low-level secondary school degrees that did not prepare them well for their future endeavors, and high school dropout levels that were much too high. We follow this up with a comparison of the reforms that were enacted to address these issues in both countries and we end with an analysis of the reforms, as well as, additional questions.

Structure and Governance of Education

Before describing the reforms in the two countries, it is important to take a brief look at the overall structure of the two school systems.

United States

In the U.S., the federal government does not have direct authority over education but it can promote specific education policies, provide education statistics, and it must enforce civil rights laws and administer federal assistance programs such as those for low-income students. The fifty states have authority over education with many of the political, administrative, and fiscal decisions happening at the state-level. In most states, this includes the licensing of teachers, developing funding formulas, licensing charter and private schools, monitoring the provision of education for students with disabilities, advising school districts on new state and federal policies, and sometimes approving curricula and textbooks. As a result of the considerable power given to states,

they have created vastly different education systems but there is also a considerable level of control and administration of public education at the local level, usually known as school districts. The actual operation of schools happens at the district level where state and federal policies are implemented, teachers and principals are hired, additional district-level policies are decided upon and implemented, and funding decisions are made regarding the distribution of state and federal funds but also the level of local funding (U.S. Network for Education Information 2008). As examples, in a given state, the graduation requirements from one school district to another may be completely different: kindergarten may be half-day or full-day, there may be stand alone primary schools that end in fourth grade, or they could also include the middle school years and end at eight grade.

The most popular type of secondary school in the United States is the comprehensive high school, which serves students in grades nine through twelve and is characterized by many different types of course offerings within one school. The theory behind a comprehensive high school is that it offers all students a chance to take courses of their choosing and academic ability and regardless of the path chosen, earn a high school diploma.

Germany

In Germany, the sixteen *Länder* (states) have the responsibility for education policy. Because education is not a federal responsibility, the educational systems of the *Länder* differ in the length of primary schooling, secondary school types, and their pedagogical orientations. Although the school systems vary tremendously between the *Länder*, the one element that was always remarkably similar throughout Germany was the structure of the secondary school system. The primary responsibility for legislation and administration in education, the so-called cultural sovereignty (*Kulturhoheit*), rests with the *Länder* but since 1948 the Conference of the States' Ministers of Education and Cultural Affairs (*Kultusministerkonferenz*) has coordinated and harmonized education policy across the *Länder*.

In contrast to most Western democracies, Germany has not introduced comprehensive secondary education. After the Second World War it reinstated the traditional tripartite school system which tracks students into hierarchically structured and spatially segregated school types (Meyer). For decades, Germany was known for having a selective tripartite secondary school system comprising the *Gymnasium*, *Realschule* and *Hauptschule* (Nikolai and West). Traditionally, after only four¹ years of primary schooling, students were referred to distinct secondary educational tracks, each associated with a different curriculum and certificate: The academic track (*Gymnasium*) prepared students for the university-entrance qualification (*Abitur*). The other tracks prepared students for vocational training with the lowest track (*Hauptschule*) primarily for crafts and manual occupations, and the middle track (*Realschule*) for technical and service occupations.

Given its distributional consequences, the tripartite school system has been repeatedly criticized for being socially selective and thus incompatible with democratic equality norms. It has also been challenged for being inadequate for an industrialized economy and more recently for failing to meet the skill requirements of an increasingly knowledge-based economy. The issue of structural reform has thus been brought to the political agenda in regular intervals, but until recently, it failed to gain the critical political and social support needed to move forward. Prior to the last decade, the only noteworthy structural modification was the introduction of a comprehensive school (*Gesamtschule*) in the 1970s but it did not alter the basic school structure because it long remained a marginal school type in most of the German states. In recent years, many German states have implemented sweeping structural reforms of their school systems,

Similar Academic Difficulties in the United States and Germany

As seen In Table 1 below, in 2000 the United States and Germany had similar proportions of students with low-levels of reading ability during their secondary school years. The results from the Programme for International Student Assessment (better known as PISA) reveal that in 2000, nearly 18 percent of American students and just under 23 percent of German students scored below competence level II in reading. According to the Organisation for Economic Co-operation and Development (OECD), which administers PISA, students scoring below this baseline of proficiency are unable to “demonstrate the reading literacy competencies that will enable

them to participate effectively and productively in life” (OECD 2010, 52). While mathematics and natural sciences were also assessed on PISA, we focus on reading in this paper because of its significant role for understanding computing tasks and scientific issues.²

While the United States had the same proportion of and Germany had slightly more struggling readers than the OECD average, the gap in reading achievement between the highest and lowest performing five percent of students was much larger in both countries than the OECD average (Table 1). The gaps in reading achievement between students from low-income families with low levels of education completion and their more advantaged peers in both Germany and the U.S. were among the largest of the participating industrialized nations (OECD 2001, 191-92).

	Reading competencies below level II	Gap in reading competence between the highest and lowest performing students
	PISA 2000	PISA 2000
U.S.	17.9	349
Germany	22.6	366
OECD-27 average ³	17.9	314

Table 1: Percent of Students with Low-Level Reading Scores and the Gap in Reading Competence on PISA 2000. Source: OECD 2010.

Having roughly one in five students reading below what the OECD considers to be prepared for life is not optimal, but what does that really mean and what are the effects? Students who read at low-levels do not feel successful in school and are more likely to take low-level courses (Lesnick et al.). They are also more likely to leave school early without a degree or credential, which is also known as dropping out. According to a study from the Center for Labor Market Studies, students who leave school without a secondary degree are more likely to be unemployed, have a lower income, and require more public assistance (Sum et al.).

Why Reform Secondary Education?

United States

In the early 2000s, the United States faced some unpleasant realities regarding the educational attainment and achievement of its youth population. For example, the Average Freshman Graduation Rate for the United States was estimated to be 72 percent⁴ in 2001 (Balfanz et al.), resulting in more than a quarter of U.S. high school students either dropping out or not graduating on time. In a post-industrial, knowledge-based economy where even a high school diploma may not lead one to the middle class, a large percentage of the American youth population were facing an uncertain future. This was especially true for minority students with just 59 and 66 percent of African-American and Hispanic students graduating high school in four years (U.S. Department of Education 2013). With this awareness came the discovery of so-called “dropout factories” where about two thousand high schools had a twelfth-grade/senior class that was 60 percent or less the size of the ninth-grade/freshman four years earlier. Sadly, minority students were over-represented in these schools and for many urban school systems, all of their high schools were in this classification (Balfanz and Legters).

In addition to low graduation rates, came a realization that even those who did graduate high school were often ill prepared for post-secondary education and/or lacked the skills necessary for starting a career. Of high school students planning on going to college and therefore taking the ACT (American College Testing) Exam, 51 percent

were determined to be ready for college-level reading (ACT 2006). Roughly one third of first year students in four-year colleges needed to take a remedial course in college (Adelman), which meant they had to pay for a course that they would not get credit for and cover material they should have mastered in high school.

The courses many American high school students were taking were not rigorous enough to prepare them for their future education and training. The single greatest school-based determinant of college success is the rigor of a student's high school curriculum. For recent high school graduates who went on to a four-year college, 82 percent of those who completed a highly rigorous high school curriculum graduated with a Bachelors' degree. For those with a low-level curriculum, just 9 percent graduated college with a Bachelors' degree. Minority and low-income students often attended high schools where more rigorous courses were not even offered (Adelman).

Germany

Germany was shocked by its results in the first PISA study in 2000. The high share of low-performing readers and the high gaps in reading achievement launched a public debate about secondary education. One of the most discussed themes was the low performance of the *Hauptschule* students. As the lowest educational track, the *Hauptschule* had a high concentration of students from educationally disadvantaged families, those repeating years, those with low achievement levels and those from dysfunctional families (Klieme et al). There were also an above average number of students with migrant backgrounds and parents with low-levels of education (Solga and Wagner). Students in the *Hauptschule* were therefore at a disadvantage compared with those in the *Realschule* and *Gymnasium* in terms of the student mix. In the *Hauptschule* nearly 50 percent of students performed below competence level 2 in the PISA 2000 study (Deutsches PISA-Konsortium 2001). Students from the *Hauptschule* also showed a high risk of leaving school without a school-leaving certificate, and they faced enormous challenges in finding apprenticeships in vocational education and training. The degree from the *Hauptschule* no longer guaranteed a successful transition from school to work.

The declining relevance of the *Hauptschule* was reinforced by a second development: Between 1955 and 1995, the proportion of students in the *Hauptschule* fell by nearly 50 percentage points (from 74% to 25%). In the same period, the proportion of students attending the *Gymnasium* increased by 15 percentage points (from 16% to 31%), and the proportion attending the *Realschule* increased by 18 percentage points (from 9% to 27%) (Nikolai and West). Over the past half century the higher tracks of lower secondary education (*Gymnasium* and *Realschule*) have expanded considerably, leading to substantial changes in the distribution of students in Germany's secondary school system. The decline of the *Hauptschule* school type into a "school for leftovers" put acute pressure on education policymakers in many German states.

Secondary School Reforms

As stated earlier, there have been quite a number of education reforms in the U.S. and Germany over the last decade. Despite the various reforms, we will focus on some reforms aimed at helping at-risk high school students who as mentioned above were more likely to have lower levels of reading ability. At-risk students include those coming from mainly low-income families and those with a migrant background.

United States

In the United States, there have been many reforms aimed at improving the educational preparation and attainment of high school-aged at-risk students. One reform that has been popular in many states is the requirement of a college and career-ready curriculum for all. Another reform strategy has been an intense focus on the worst performing high schools or so called "dropout factories."

College and Career-Ready for All

In the United States, many people worried that far too many students were taking low-level courses that did not prepare them for life after high school. In many states, the resulting policy change was to require all high school graduates to complete the coursework usually reserved only for students that were likely to go to four-year

colleges. For many states, the local districts had the right to set graduation requirements, with some setting a rigorous bar for all students to graduate, some setting minimal requirements, and others setting many different bars for different types of diplomas (i.e., diploma with honors, academic diploma). Over the last eight years, several states have passed legislation to either set or increase state-level course requirements for high school graduation.

According to Achieve Inc., in 2005, just three states required all high school students to graduate with a college and career-ready curriculum. By 2012, twenty-three states and the District of Columbia required this high-level curriculum, which includes at least three challenging mathematics courses— “covering Advanced Algebra; Geometry; and data, probability, and statistics content — and four years of rigorous English aligned with college- and career- ready standards” (Achieve 2012) along with other courses to ensure a well-rounded curriculum.

Given the federalist governance of education in the United States, the states went about these requirements in different ways but regardless of the mechanism, the theory of the change is the same—to eliminate the low-level course-taking track that has long held back too many students, especially at-risk students, from a high school diploma that will prepare them for life after high school.

Focusing on Dropout Factories

In 2009 as the United States was struggling with the worst economic crisis since the Great Depression, the American Reinvestment and Recovery Act was passed. While this act was focused on rehabilitating the U.S. economy as a whole, \$3 billion were set-aside for School Improvement Grants (SIG), which focused on the lowest performing schools and prioritized high schools with a graduation rate less than 60 percent (“dropout factories”).

To qualify for the SIG grants, school districts had to submit an application with one of four models to quickly turn around each of their lowest-performing schools:

Turnaround Model: the school principal and at least half of the school staff must be replaced, and new governance and instructional methods must be adopted.

Restart Model: The school district must close and reopen the school under the management of a private operator.

School Closure: The school district must close the failing school and enroll the students who attended that school in other, higher-achieving schools in the district.

Transformational Model: The school must address (1) teacher and school leader effectiveness (and replace the principal); (2) comprehensive instructional reform strategies; (3) extended learning, teacher planning time and community-oriented programs; and (4) operating flexibility and sustained support (White House 2010).

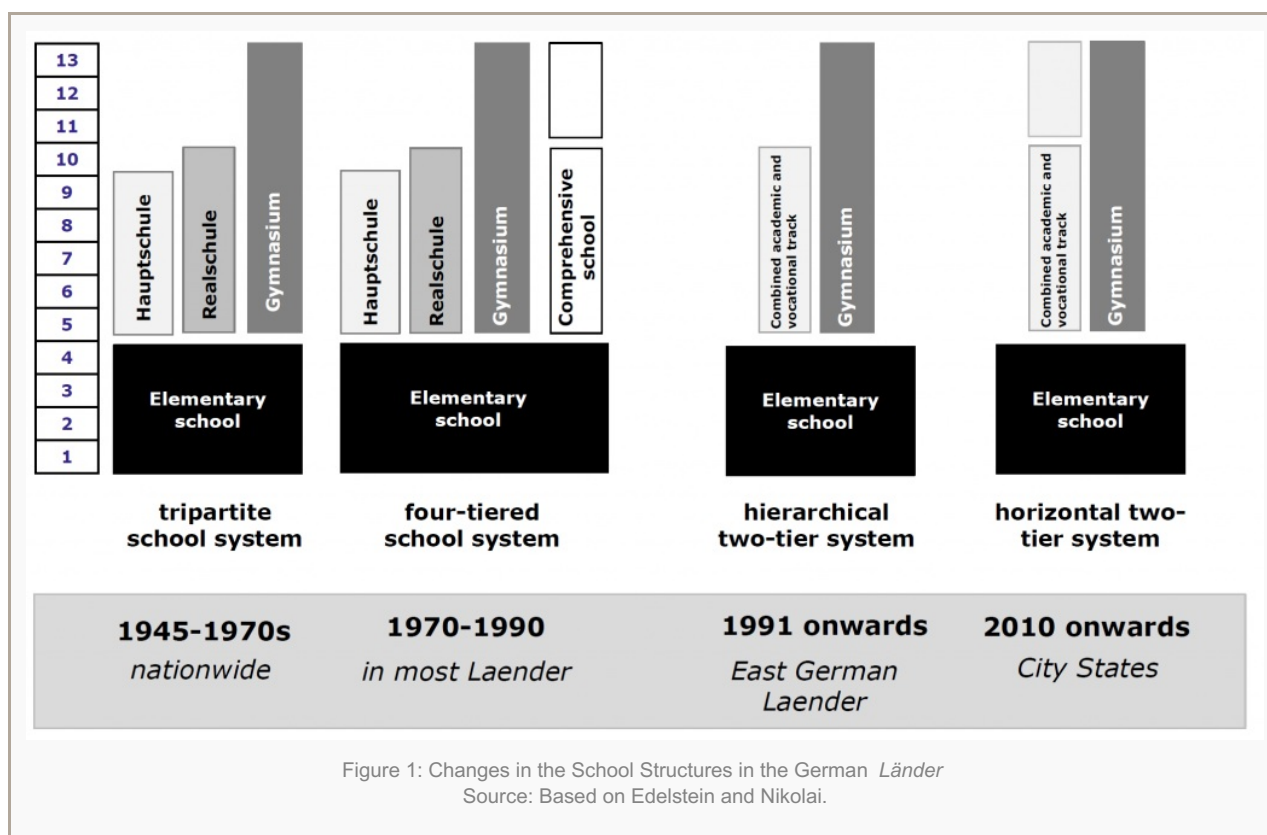
Given the complexity of most of the turnaround strategies, 74 percent of the SIG recipients opted for transformation plans. Some states split up the funding so that nearly all eligible schools received a little extra funding. Others awarded the funding on a more competitive basis so that schools with the strongest applications received up to \$7,000 more per student (Hurlburt et al.).

Germany

In recent years, many German states have implemented sweeping structural reforms of their school systems. After decades of administering a tripartite selective secondary school system (figure 1), structural change ensued in 1990 as a result of German reunification but was mainly reserved for integrating the East German “new” *Länder* into the existing West German educational system. While the East German *Länder* adopted the basic idea of a selective multi-tier school system, they implemented a two-tier model instead of the three-tier model common throughout West Germany. Saxony, Saxony-Anhalt, and Thuringia, for example, introduced models consisting of an academic and a combined vocational track, with *Hauptschule* and *Realschule* partially integrated. In the 2000s, after decades of polarizing controversies and failed attempts at reform, most West German *Länder* started introducing changes to their traditional school structures as well.

The reform processes in the German *Länder* resulted in different models of two-tier secondary school systems.

The East German *Länder* implemented a hierarchical two-tier model by establishing a combined vocational and academic track as the only school type besides the university-preparatory *Gymnasium*. This school form integrates the two vocational tracks until the seventh grade, but then proceeds to internally stream students into tracks leading to either the *Hauptschule* or the *Realschule* certificate. The city states (Berlin, Bremen, Hamburg), by contrast, opted for a horizontal two-tier model, consisting of the *Gymnasium* and a second type of school, which integrates all tracks and offers the full range of secondary school certificates, including the *Abitur* as the university entrance qualification.



The newly established two-tiered school system, consisting of an academic and a combined vocational track, is becoming increasingly popular. By 2013, eleven of the sixteen *Länder* had abolished the *Hauptschule* replacing it with a two-tier school model. There are still considerable differences between the West German *Länder*. Baden-Württemberg, Hesse, Lower Saxony, and North Rhine-Westphalia, for example, have created opportunities for merging *Hauptschule* and *Realschule* into schools offering multiple education tracks, but otherwise continue to adhere to the traditionally tripartite structured school system. Bavaria is the only German *Land* that has made only minor changes in its school structure so far.

While the specific design of the implemented changes vary from *Länder* to *Länder*, the abolition of the *Hauptschule* as an independent type of school is a common feature (Liegmann and Bouß; Edelstein and Nikolai).

Discussion

Over the last ten years, outside forces such as PISA kick-started high school reforms in Germany. In no other country did PISA 2000 create such a media stir as it did in Germany (Niemann). In the United States where PISA results barely made the news, inside forces such as the increased awareness of a high school dropout epidemic and the prevalence of low-level courses, as well as their dire economic effects seem to have been the catalysts for action.

The U.S. and Germany and the states within them recognized that major reforms were necessary. In this article we have only compared a few of the recent high school reforms in the two countries, but they also have implemented many other similar reforms including common education standards and assessments, school autonomy, extending the school day, and changes in teacher requirements. Regardless of the similarities of the

reforms, both countries developed their reforms differently because of the structures of their schools and systems.

Unlike Germany, the United States, with its comprehensive high schools, did not have a category of schools with high proportions of at-risk students to reform or eliminate. Instead they had to focus on the elimination of internal tracking and schools with overall low-expectations by raising the course requirements for graduation for all students and by funding drastic changes to the high schools with the worst graduation rates.

With all of these reforms, naturally there are many questions about results: Are they working? Are they helping the at-risk students? How do they affect other students? For each one of these questions it is important to point out that much more research is necessary in order to make correlations between specific reforms and student results. That said, recent data show some interesting trends.

Emerging Trends and Results

In the United States and Germany, the gap in reading performance between the highest and lowest performing 5 percent of students has narrowed significantly. Between 2000 and 2012 there were 46 and 66 scale score point decreases in the performance gaps in the United States and Germany respectively, which was better than the OECD average decrease of 2 scale score points (Table 2). Given the concerns in both countries about the size of their achievement gaps, this could be seen as good news, especially for Germany, which tied with Poland for increasing the performance of its lowest performing 5 percent of students more than any other OECD country (OECD 2001, 2013).

The narrowing of the reading performance gap also raises some concerns. The percent of students performing at the highest levels of reading competence on PISA decreased in the U.S. from 12.2 to 7.9 percent. In Germany the percent performing at highest levels increased just 0.1 percent to 8.9 percent (OECD 2001, 2013) Both countries but especially the U.S. must work to ensure that the hard-earned gains of the lowest performing students are accompanied by the improvement of their highest performers with a focus on their specific educational needs as well.

In Germany, the percentage of students with reading competencies below level II dropped about eight percentage points. This is a large improvement considering that for the United States the decrease during the same time period was just 1.3 percent and that the average percentage of students reading below level II for OECD nations decreased just 0.8 percent (see Table 2). For the United States, this brings into question whether the college and career-ready curricular reforms are truly providing students with higher-level courses or if they are higher-level in name only.

	Reading competencies below level II		Gap in reading competence between the highest and lowest performing students	
	PISA 2000	PISA 2012	PISA 2000	PISA 2012
U.S.	17.9	16.6	349	303
Germany	22.6	14.5	366	300
OECD-27 average ⁵	17.9	17.0	314	312

Table 2: Percent of Students with Low-Level Reading Scores and the Gap in Reading Competence on PISA 2000 and 2012.

Source: (OEC 2001, 2013)

Simultaneously, in the United States, the freshman four-year graduation rate increased from 72 percent in 2001 to 78 percent in 2010. Between 2006 and 2010, African-American and Hispanic students, with seven and ten percentage point gains respectively, made the largest gains. Similarly, between 2002 and 2011, there was a 29 percent reduction in the number of “dropout factories,” decreasing from 2007 schools to 1424 schools. Further, the number of students attending a “dropout factory” decreased by 41 percent in this same time period resulting in about one-million fewer students attending such schools (Balfanz et al.). The timing of these positive results clearly cannot be tied to the 2009 School Improvement Grants (SIG), but the focus on these schools since the mid-2000s, which elevated them to be specifically included in federal policy does give an indication of the level of attention and commitment they received. Similarly, the percent of early school leavers in Germany also decreased from 13.7 to 11.5 percent between 2006 and 2011 (European Commission 2013).

In summary, it remains an open question whether structural or non-structural reforms lead to better educational results or if any of the reforms discussed are correlated with better student results. What can be said is that both countries made significant reforms and improved the educational outcomes for at-risk students. In Germany, student reading performance has improved tremendously for the lowest-performing students and the percent of students leaving school early has decreased, while in the U.S., the four-year graduation rate has improved and there are fewer “dropout factories.” In essence, both countries are still in the race.

Notes

1 In two states, Berlin and Brandenburg, elementary schools have six grades.

2 In addition, reading competencies are one of the five Lisbon objectives of the European Union (Allmendinger et al.).

3 OECD average refers to twenty-seven OECD member states, which participated in PISA 2000 and 2012 without Chile, Estonia, Israel, Netherlands, Slovak Republic, Slovenia, and Turkey.

4 In 2000 the National Center for Education Statistics reported a graduation rate of 86.9 percent; however, this included alternative credentials such as a General Equivalency Diploma (GED), which do not have the same weight as a high school diploma and have very different long-run continuing education and economic outcomes. The U.S. also did not have a common way of calculating graduation rates as this was left to the states and each one decided how to count them. One method that was used as an estimate was the Average Freshman Graduation Rate.

5 OECD average refers to 27 OECD member states without Chile, Estonia, Israel, Netherlands, Slovak Republic, Slovenia, and Turkey.

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