

What Influences the Diffusion of  
Foreign Language Programs in U.S. K-12 Public Schools

By  
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## Abstract

As the United States becomes ever more pluralistic and globalization makes the world more closely connected, it has never been more necessary to build an educational system that helps students grow into competent world citizens who can communicate effectively in languages other than English. Despite the growth of foreign language education in the United States during the past decades, an increasing number of research articles on foreign language programs have shown that foreign language learning in U.S. K-12 public schools is still lagging behind compared to the other nations and the desired state that U.S. policymakers, educators, parents, major research organizations, business leaders, and the general public would like it to be. Among different states and different foreign languages, there are huge gaps. In addition, very little is known about the patterns by which foreign language programs diffuse and how the current patterns are formed, which can inform our understanding of the state of U.S. foreign language education and provide information for policymakers and stakeholders for schools. Building on existing research, this dissertation explores these two research questions: What factors influence the diffusion of foreign language programs in U.S. K-12 public schools, and to what extent do these factors help form the current state of foreign language enrollments in U.S. K-12 public schools? In this study, the term *foreign language* refers to any language other than English, though some *foreign* languages that are taught in U.S. schools are not *foreign* to the U.S. or to all students therein.

Based on a review of literature on human capital theory, social and cultural capital, resource dependence, and institutional theory, this dissertation relied on various data sources to construct a state-level panel dataset for the school years of 2004 to 2005, 2007 to 2008, and 2014 to 2015, focusing on foreign language enrollments in all 50 states for U.S. K-12 public schools,

and regression with random-effects using Stata, to address the stated research questions. Analysis results demonstrated that parents' education, state policies, race, state political conservatism, and region factors have significant effects on the current state and diffusion patterns of foreign language programs in U.S. K-12 public schools. The results indicate that both parents' education and state policies have strongly positive effects on foreign language education, even though the effects are not significant or exclusively positive on all the seven selected foreign languages which are Spanish, French, German, Latin, Chinese, Japanese, and Russian. The influential power of race and state political conservatism is comparatively smaller and varies depending on different foreign language programs. In terms of percentages of foreign language enrollments, region factors also matter and showed significant effects.

Further research is needed to identify factors that could help shape the within-state (such as district-level or regional level) disparities of foreign language enrollments. The research can also extend to private schools and college-level foreign language education, include a wider range of foreign languages and more forms of foreign language instruction, and explore diffusion patterns of foreign language programs in different grade levels and taking language proficiency levels into consideration.

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## **Chapter 1: Introduction**

As the United States becomes ever more pluralistic, pressures mount to ensure that schools provide students from diverse backgrounds with an array of educationally, ideologically, culturally and linguistically diverse experiences to meet the students' diverse needs. During the past several decades, U.S. policymakers, educators, parents, major research organizations or institutes, business leaders as well as the general public have called for an educational system that helps students become competent world citizens who can communicate effectively in languages other than English. This change has never been more needed responding to the economic globalization and international terrorism in the 21<sup>st</sup> century (Jackson & Malone, 2009; Partnership for 21<sup>st</sup> Century Skills, 2004; U.S. Department of Defense, 2005; U.S. Department of Education, 2008; National Research Council, 2007; Scott, 2005). With the persistent efforts of various parties, some up-to-date, detailed information about the state of U.S. K-12 school foreign language instruction was published and became available to the general public, and foreign language education in the United States has indeed attracted more people's attention across the nation.

Despite the growth of foreign language education in the United States and an increasing number of research articles on foreign language programs, little is known about the patterns by which foreign language programs diffuse, especially how the current patterns are formed, which is an important research question because the United States is trying and in the process of catching up with other countries' foreign language education. This dissertation will explore and answer this research question: What factors influence the diffusion of foreign language programs in U.S. K-12 public schools? And more specifically, this dissertation will research on to what extent these factors help form the current state of foreign language enrollments in U.S. K-12



public schools. This introduction session reviews the history and current state of foreign language education in U.S. K-12 public schools and addresses some important factors that are associated with the growth of foreign language education in U.S. K-12 public schools.

In this dissertation, *foreign language* is used to refer to any language other than English. It is well recognized in the field that the term *foreign language* is becoming increasingly problematic in that the United States has been becoming a more and more diverse country. Some “foreign” languages that are taught in U.S. schools are not “foreign” to the United States, such as American Sign Language (ASL), and many are not “foreign” to all students, for instance, Spanish to its heritage speakers. Therefore, many states and school districts have chosen to adopt terms such as *world languages*, *second languages*, or *languages other than English* instead of the traditional term *foreign language*. However, in this dissertation I selected the traditional term *foreign language* because I believe that it is the most widely understood and recognized expression to the general public.

### **Why Learn Foreign Languages, and Foreign Language Learning in the United States**

Learning a new language takes time and dedication. Once you do, being fluent in a foreign language offers numerous benefits and opportunities. It becomes more and more generally recognized that accelerating technological advances, a rapidly changing knowledge base, an interconnected workforce and an increasing global society, have combined to create the need for students to develop essential 21<sup>st</sup> century skills. “Learning other languages and understanding the culture of the people who speak them is a 21<sup>st</sup> century skill that is vital to success in the global environment in which our students will live and work.” (World Language 21<sup>st</sup> Century Skills Map, Partnership for 21<sup>st</sup> Century Skills, 2011)

Considerable research has already shown that proficiency in more than one language benefits both individual learners and society (NEA Research, 2007). For individual learners, research has found a positive relationship between second language proficiency and cognitive and academic ability. In addition to developing a lifelong ability to communicate with people from other countries and backgrounds, other benefits of foreign language learning include improved overall school performance, superior problem-solving skills, developing social awareness, and enhancing career opportunities in a diverse and expanding range of fields (Bamford & Mizokawa, 1991; Hakuta, 1986; Grosse, 1994; Koning, 2009-2010). For the whole society, a multilingual workforce can also enhance America's economic competitiveness abroad, help maintain America's political and security interests, and culturally, promote tolerance and intercultural awareness (Marcos & Peyton, 2000).

In spite of the fact that learning a foreign language is very beneficial, foreign language learning in U.S. K-12 public schools has been lagging behind compared to other countries. All but two countries (Ireland and Scotland) in the European Union mandate the study of a foreign language, which usually begins in primary school, and research shows that beginning the study of languages early is helpful in developing proficiency (Johnson & Newport, 1989; Hurford, 1991). With the exception of Italy and Wales, all European students must learn a foreign language throughout their compulsory education (Eurydice, 2005). While according to the 2010 report of American Council on the Teaching of Foreign Languages (ACTFL), as shown in Table 1, less than 20% (18.51% in the academic year of 2007 to 2008) U.S. K-12 public school students enrolled in foreign language programs. This number slightly grew to 19.66% during the academic year of 2014 to 2015 according to the ACTFL Report in June 2017, which is still far

from the state where U.S. policymakers, educators, parents and the general public would like it to be.

Table 1: Total National Foreign Language Enrollments (Percentages) by Year

Year	Percentage of Students Enrolling in Foreign Languages
2004-2005	18.00%
2007-2008	18.51%
2014-2015	19.66%

*Note.* Adopted from “Foreign Language Enrollments in K-12 Public Schools: Are Students Prepared for a Global Society?” by American Council on the Teaching of Foreign Languages, 2010, and “The National K-12 Foreign Language Enrollment Survey Report,” by American Council on the Teaching of Foreign Languages, 2017.

Some organizations or research centers, such as ACTFL, Center for Applied Linguistics (CAL), and Modern Language Association (MLA), have conducted regular national surveys on foreign language enrollments in U.S. schools. These surveys provide insight into the current state of foreign language enrollments, the number of schools offering foreign language classes, the types of foreign language offerings, foreign language curricula and methodologies, and teacher qualifications and training, among many other issues. Research reports of the surveys demonstrate a clear picture of the current state of foreign language education in the United States as well as the huge gaps between the current state and the desired one. Among these reports, for research purpose, this dissertation used some data from ACTFL Reports *Foreign Language Enrollments in K-12 Public Schools: Are Students Prepared for a Global Society?* (2010), *The National K-12 Foreign Language Enrollment Survey Report* (2017), and the CAL Report *Foreign Language Instruction in U.S. Schools: Results of a National Survey of Elementary and Secondary Schools* (2011).

## **Foreign Language Education in U.S. K-12 Public Schools: History and the Current State**

Language education in the United States has historically involved teaching American English to immigrants, and teaching Spanish, French, German, Latin, and other foreign languages to native English speakers. The former composes the booming *English as a Second Language* (ESL), or *English for Speakers of Other Languages* (ESOL) programs in U.S. schools with over 40 million foreign-born residents currently in the United States, 17 percent of whom have entered the country between 2005 and 2012. The Melting Pot metaphor is stronger than ever in American schools (Fox News Health, September 12, 2012). The latter is also known as *foreign language education*, or *world language education*. This dissertation only focuses on the latter, and studies teaching any languages, including American Sign Language (ASL), other than English in U.S. K-12 public schools.

Spanish, French, and German have been the most commonly taught foreign languages in U.S. schools. Spanish has the largest enrollment due to a large number of immigrants from Spanish-speaking countries. By contrary, Less Commonly Taught Languages (LCTLs) is a designation used in the United States for foreign languages other than these three languages. According to National Council of Less Commonly Taught Languages, approximately 91% of Americans who study foreign languages in K-12 schools, colleges, and universities choose French, German, Italian, or Spanish; while only 9% choose languages such as Arabic, Chinese, Japanese, Persian, Russian, Swahili, Yoruba and the other languages spoken by the overwhelming majority of people around the world.

The term LCTLs covers a wide array of world languages (other than English), ranging from some of the world's largest and most influential languages, such as Chinese, Russian, Arabic, Hindi, Portuguese and Japanese, to smaller regional languages studied in the United States mainly by area experts, such as Tibetan (mainly spoken by the native Tibetan ethnic group

in Tibet, China). The term arose out of a need to contrast the more commonly taught languages in U.S. K-12 schools with those normally encountered only at college level. This great division is reflected both in the U.S. textbook industry which caters to the existing K-12 market by necessarily focusing on the “Big Three,” and also in historical U.S. governmental funding for foreign language education. Therefore, some people also refer them to LCFLs as the “Less Commonly Funded Languages.” This dissertation will explore this issue in more details.

Japanese language education in the United States increased following the Japanese post-war economic miracle. With the fast rise of China in economic and political influence, Chinese (or Mandarin Chinese, to distinguish it from the other dialects of Chinese language, such as Cantonese) has become one of the most important international languages. Chinese as a second language began to be taught more frequently around the world in response to the *Reform and Opening* that started in 1978 in the People’s Republic of China (PRC), especially with the funding from the PRC government for Confucius Institutes and Confucius Classrooms launched since 2004 (CNN, January 19, 2011). In the aftermath of the 9/11 terrorist attacks, U.S. federal departments and agencies recognized the strategic importance of Less Commonly Taught Languages (LCTLs). U.S. Senator Norm Coleman called Arabic “the next strategic language.” As a result, the U.S. government started funding programs such as the National Flagship Language Initiative (NFLI: <https://www.thelanguageflagship.org>) under the auspices of the National Security Education Program (NSEP), and the National Security Language Initiative for Youth (NSLI-Y: <http://www.nsliforyouth.org>) programs sponsored by the U.S. Department of State. These programs have been developed to encourage the teaching and learning of Less Commonly Taught Languages that are critical to national security including Arabic, Chinese, Hindi/Urdu, Korean, Persian (Dari/Farsi/Tajik), Portuguese, Russian, Swahili, and Turkish.

Every year, Joint National Committee for Languages (JNCL) organizes a policy summit, networking event and Capitol Hill Visit with representatives known as Language Advocacy Day (or LAD for short), and hosts advocates from across the United States who want to raise awareness about the positive cognitive and economic benefits of language learning in the believe that, languages are critical for job growth, national security, and social justice; therefore, foreign language learning should be a pillar of the 21<sup>st</sup> century American economy and national security strategy.

Despite of all these efforts and initiatives mentioned above, foreign language learning in U.S. K-12 public schools is still lagging behind comparing with the desired state that its various stakeholders would like it to be. The general trend is that foreign language enrollments are increasing but very slowly, and there are still huge gaps between states and different foreign languages. How this state is formed would be the question this dissertation will answer.

## Chapter 2: Literature Review

According to Pufahl and Rhodes' (2011) *Foreign Language Instruction in U.S. Schools* report, and as shown in Table 2, in 2008, only 15% of public elementary schools (24% in 1997), and 58% of public middle schools (75% in 1997) offered foreign language instruction. While foreign language learning is generally considered as a high-school level course in the United States, not all but only 91% of the public high schools offered foreign language instruction in 2008, which also saw a 4% decrease from two decades ago. Therefore, while exciting students about foreign language learning can only work when there are programs in place for them, a large number of students will not have opportunity to receive formal foreign language instruction in their schools.

Table 2: Schools Teaching Foreign Languages (by School Level) (1987, 1997, 2008)

Year	Percentage of Public Elementary Schools Teaching Foreign Languages	Percentage of Public Middle Schools Teaching Foreign Languages	Percentage of Public High Schools Teaching Foreign Languages
1987	17%	72%	95%
1997	24%	75%	90%
2008	15%	58%	91%

*Note.* Adopted from "Foreign Language Instruction in U.S. Schools: Results of a National Survey of Elementary and Secondary School" by Pufahl, Ingrid & Rhodes, Nancy, 2011, Center for Applied Linguistics.

This certainly did not happen accidentally. Multiple research shows that economic constraints during the beginning of 2000s combined with unintended adverse effects of *No Child Left Behind* (NCLB) Act have affected public school foreign language programs negatively (Center on Education Policy, 2009; Hu, 2009). Nearly one third of public elementary and secondary schools with language programs reported that foreign language teaching had been negatively affected by NCLB Act because they had to focus on subjects that are tested (Phfahl &

Rhodes, 2011). ACTFL and CAL survey results also revealed issues of unequal access to foreign language instruction in different states, school districts, and school buildings.

Table 3: State Foreign Language Enrollment (2014-2015)

<b>State</b>	<b>K-12 Total Enrollment</b>	<b>K-12 Foreign Language Enrollment</b>	<b>Percent of K-12 Students Enrolled in Foreign Languages</b>
Alabama	821,691	143,069	17.41%
Alaska	134,315	22,187	16.52%
Arizona	1,180,836	107,167	9.08%
Arkansas	507,060	46,095	9.09%
California	6,806,050	946,779	13.91%
Colorado	896,918	110,995	12.38%
Connecticut	614,313	173,580	28.26%
Delaware	149,108	48,218	32.34%
District of Columbia	72,937	34,408	47.17%
Florida	2,981,349	622,451	20.88%
Georgia	1,832,631	407,323	22.23%
Hawaii	216,044	40,198	18.61%
Idaho	308,290	37,584	12.19%
Illinois	2,258,315	294,686	13.05%
Indiana	1,165,262	228,059	19.57%
Iowa	524,775	79,944	15.23%
Kansas	520,583	79,477	15.27%
Kentucky	741,776	83,098	11.20%
Louisiana	806,125	106,987	13.27%
Maine	201,408	38,280	19.01%
Maryland	976,670	344,072	35.23%
Massachusetts	1,048,398	277,048	26.43%
Michigan	1,708,384	384,442	22.50%
Minnesota	928,080	188,018	20.26%
Mississippi	544,498	72,527	13.32%
Missouri	1,021,563	158,111	15.48%
Montana	160,423	16,221	10.11%
Nebraska	331,732	58,832	17.73%
Nevada	483,466	59,003	12.20%
New Hampshire	210,631	57,855	27.47%
New Jersey	1,508,220	771,832	51.18%
New Mexico	373,149	31,732	8.50%
New York	3,153,513	857,958	27.21%
North Carolina	1,668,877	328,918	19.71%
North Dakota	108,163	23,668	21.88%
Ohio	1,973,655	357,474	18.11%
Oklahoma	675,116	82,096	12.16%
Oregon	624,386	67,640	10.83%
Pennsylvania	2,014,442	401,693	19.94%



<b>State</b>	<b>K-12 Total Enrollment</b>	<b>K-12 Foreign Language Enrollment</b>	<b>Percent of K-12 Students Enrolled in Foreign Languages</b>
Rhode Island	160,466	36,023	22.45%
South Carolina	801,798	166,282	20.74%
South Dakota	145,878	27,172	18.63%
Tennessee	1,087,679	240,109	22.08%
Texas	5,080,783	960,911	18.91%
Utah	622,449	131,118	21.06%
Vermont	94,632	33,153	35.03%
Virginia	1,358,037	272,041	20.03%
Washington	1,144,380	168,316	14.71%
West Virginia	279,204	36,380	13.03%
Wisconsin	985,362	357,575	36.29%
Wyoming	97,150	19,477	20.05%
<b>Total</b>	<b>54,110,970</b>	<b>10,638,282</b>	<b>19.66%</b>

*Note.* Adopted from “The National K-12 Foreign Language Enrollment Survey Report,” by American Council on the Teaching of Foreign Languages, 2017.

According to the ACTFL national survey in 2017, in the school year of 2014 to 2015 (as shown in Table 3), 51.18% New Jersey K-12 students, 47.17% District of Columbia K-12 students, and 36.29% Wisconsin K-12 students enrolled in foreign language courses. However, three states, Arkansas, Arizona, and New Mexico, enrolled less than 10% of their K-12 students in foreign language courses. The gaps are huge. The Phfahl and Rhodes (2011) report summarized that, foreign languages were more likely to be offered in the Northeast than any of the other regions, while less likely to be offered in rural schools overall, small middle and high schools, and schools whose students were from lower socioeconomic backgrounds, and the gap has widened between the “haves” and the “have-nots.” Some schools that were not teaching foreign languages gave their explanations in the survey, including lack of funding, decision making at the district level instead of school building level, shortage of qualified language teachers, languages not seen as a core component of an elementary school curriculum, so on and so forth.

From the research mentioned above, whether schools chose to teach foreign languages or not varied by geographic region, schools' metropolitan status, school size, students' socioeconomic status, as well as school financial status and human resources. These factors were drawn out only from some of the characteristics of schools and students, thus this list cannot be exhaustive.

There is no doubt that school administrators and teachers have a certain level of autonomy within their school districts, school buildings, and classrooms; however, as institutions with critical social functions, schools, especially public schools, never operate independently but are constantly under the influence of various stakeholders, such as the multiple levels of government, parents, students, and the general public. To gain and maintain legitimacy, schools have to try their best to meet the needs and expectations of their different groups of stakeholders, from performing their duties within a network of federal and state laws and regulations, to developing programs to promote students' learning and growth. Schools' normal operation also relies on financial resources, human resources, legislative recognition, and support from parents, students as well as the school community. Education is no trivial matter. This dissertation aims to examine the components that influence the diffusion of foreign language programs in U.S. K-12 public schools, and how these components function together to form the current state more thoroughly. To reach this research goal, this dissertation will be based on multiple theories and look into the research questions from a variety of aspects of sociological perspectives.

### **Human Capital Theory (HCT)**

Human capital is defined as “productive wealth embodied in labor, skills and knowledge” (OECD, 2001). It refers to any stock of knowledge or the innate/acquired characteristics a person

has that contributes to his or her economic productivity (Garibaldi, 2006). Human Capital Theory (HCT) suggests that education increases the productivity and earnings of individuals, and it influences future real income through the imbedding of resources in people; therefore, education is a way of investment in human capital. This investment is not only crucial for individuals but also the key to the economic growth of a country. In this era of globalization and prosperous transnational exchange, knowledge of foreign languages and foreign cultures is increasingly valuable to prospective employers in both public and private sectors. The skill of communicating in a foreign language gives an individual advantage in the job market, and there is little room for doubt that a workforce that can communicate effectively in languages other than English will contribute to the American economic growth.

Gary Becker's concept, *Hunan Capital*, has become one of the most popular topics in economics since the 1960s, and the concept has been widely used as an instrument to shape educational policies in many countries. HCT postulates that individuals invest in education in the hope of getting a higher income in the future. Marginson (1993) described the line of assumptions in HCT as that, the individual acquires knowledge and skills through education, that is, human capital. The knowledge and skills will increase his or her productivity in the workplace. The increased productivity will bring a higher salary to the individual. Therefore, people would invest in education up to the point so as to enjoy the private benefits. In light of this set of assumptions, it is clear that the logic of HCT is that, education increases human capital, and this leads to a higher productivity rate, which in turn brings a higher wage for the individual. It can be claimed that education and earnings are positively correlated, and there is no doubt that education should be promoted.

Some very important empirical implications were also derived from the human capital theory: abler persons receive more education and other kinds of training than others; unemployment rates tend to be negatively related to the level of skill; and the distribution of earnings is positively skewed, especially among professional and other skilled workers (Becker, 1962). It is well documented that education can increase private returns, though as a theory, HCT has its serious limitations and imperfections (Tan, 2014). In academia, there are many attempts to challenge HCT. For instance, Fevre, Rees, and Gorard (1999) assert that HCT is flawed, and their sociological theory of participation also takes into account historical, geographical, social, and cultural factors that influence individuals' motivations of post-compulsory education. However, HCT is still a strong theory and it seems to stay for now before there is a new theory to replace it. The human capital approach is especially popular among politicians and bureaucrats because it provides politicians with the pretext for action so that they can justify their education and social policies, and it legitimates increased expenditure on education (Tan, 2014). More investment in education rewards both individuals and society with more economical benefits, and in turn, individuals and society will gain more resources to invest in education in the future. This forms a positive circle.

Hickman and Olney (2011) examined the impact of globalization on the American labor market and their results indicate that American workers respond to globalization by increasing their investment in human capital, specifically, workers returning to school on their own which leads to increases in enrollment at higher education institutes, especially community colleges. Workers nowadays are increasingly competing in an integrated global labor market. It is a valuable bargain chip if you know and master a foreign language on the top of your other expertise. Therefore, we can assume that students are more likely to learn foreign languages and

improve their skills if they see more opportunities to use their foreign language skills in the work market in the future, especially in the field of international business. Regions and areas with higher GDP and better economic conditions tend to have more resources and are more willing to invest in education, hence provide financial support for foreign language programs.

### **Social and Cultural Capital**

More and more research has proved that the inequality between American haves and have-nots was not only on the material level, but also on the sociological level. Bourdieu (1977) proposed the concept of social reproduction when exploring how schools replicated existing social inequalities: students with more valuable social and cultural capital perform better in school than their comparatively less fortunate peers with less valuable social and cultural capital. After Bourdieu's work, lots of studies emerged and aimed to identifying whereby social and cultural resources were converted into educational advantages.

In his paper *Social Capital in the Creation of Human Capital*, Sociologist James Coleman (1988) argued that parental involvement could reduce drop-out rates and improve children's school performance. He urged other schools to emulate this successful use of what he called "social capital." Coleman's research demonstrated that both social capital in the family and social capital outside it (such as in the adult community surrounding the school) showed evidence of considerable value in affecting education. In this dissertation specifically, social capital refers to a network-based resource that facilitates student achievement, a parallel concept of financial capital, physical capital, and human capital, but embodied in relations among persons.

From a social network perspective, the importance of ties to institutional agents is framed in terms of social capital. When relating to education field specifically, social capital refers to “social relationships from which an individual is potentially able to derive institutional support, particularly support that includes the delivery of knowledge-based resources (Stanton-Salazar & Dornbusch, 1995),” for instance, placement in an academically gifted program or the highest academic track (Oakes, 1985), encouragement and preparation for applying to college (McDonough, 1997), using networks for job placement, et al. In other words, “who you know” is also a resource that can influence student performance. Since generally, “larger stocks of parental social capital accompany higher rungs on the social class ladder” (Ream & Palardy, 2008), therefore, lower working-class students, naturally, tend to have vastly less social capital than their upper- and middle-class peers.

Lareau (1989) in her book *Home Advantage: Social Class and Parental Intervention in Elementary Education*, also explained the strong correlation between social class and parental involvement in schooling. Her research once again proved that social class, which is independent of ability, does affect schooling. Teachers expect and ask for parental involvement; “social class shapes the resources which parents have at their disposal to comply with teachers’ requests for assistance.” Via her over six months of observation and qualitative research, Lareau finds that higher-class parents, drawing on their greater knowledge, networks, and self-confidence as their status equals of school teachers, are much more active in managing their children’s education, both at home and in school. By contrast, lower-class parents, though do not differ much in their educational values from their higher-class counterparts, merely do what teachers and schools ask and respond to school suggestions; lower-class parents do not think they are competent enough, or it is within their status, to supplement or question schools’ decisions. Other studies suggest

that in poor families and working-class homes, children encounter more prohibitions, while children of parents who are professionals receive more deliberative “talk” and more affirmatives; poor and working-class parents are more likely to issue abrupt orders, while economically advantaged parents use tactics more, such as reasoning and explanation (Hart & Risley, 1995; Lareau, 2003). The differences in how parents raise and communicate with their children and shape their children’s educational careers are important and huge, and this kind of differences can be explained with the social and cultural capital theory.

Beyond the boundaries of the immediate family, parents also act as advocates for their children via their relations with other parents and school personnel. As a central institution in the society, public schools firmly and decisively promote strategies of concerted cultivation in child rearing and education. Upper- and middle-class parents, starting from their class-based sense of entitlement, often influence school personnel on behalf of their children (Lareau, 1989, 2002). As one of the key “pressure groups,” parents have the voice and the power to influence resource allocation and school programs. Parents who recognize the potential benefits to children’s future development and career, are more likely to advocate and pressure schools to offer foreign language instruction. Parents’ effective sociability, especially parent-initiated contact with other parents and with school personnel (different from parent involvement when children have academic or behavior problems), often relates to better school performance of their children (Hoover-Dempsey & Sandler, 1997). However, for working class and poor families, the cultural logic at home is out of synch with the standards of these institutions. This kind of disadvantage automatically put children from economically disadvantaged families to an inferior position in their educational path.

Kao and Tienda's (1998) study demonstrates that parent-initiated educational and cultural activities, such as visiting museums or attending cultural festivals, also play an important role and expose children to learning opportunities outside home. Parent-child informal interactions at home, such as discussions on course selection, school programs, and homework assistance, also have a positive impact on children's school performance (Keith et al., 1998; Sui-Chu Ho & Willms, 1996). All in all, higher-class parents who possess more valuable social and cultural capital tend to be more competent and active in influencing and providing assistance and resources for their children's education, which should be even more obvious when it comes to the not compulsory but rewarding foreign language learning.

### **Resource Dependence**

Organizations are controlled by environmental contingencies. In other words, organizations are dependent upon the environment for strategic resources. The environment is an array of interested parties controlling resources of importance to the organization. When it comes to the education field, there is a long list of stakeholders who constantly influence the collection and distribution of school resources. Among the resources, school funding is on the top of the most critical.

Environments of organizations vary along a number of dimensions: abundance, concentration, and interdependence of resources (Benson, 1978). It is obvious and not surprising that per pupil budget varies from school to school. Within a school building, different programs also receive different levels of attention and resource support. In the United States, a variety of parties, including the federal government, state governments, county and other intermediate units of government, municipal governments, and local school boards, all contribute to the funding of



public education. Money is collected through a variety of mechanisms, for instance, federal and state income taxes, state lotteries, sales and property taxes, the issuance of bonds, and donations. And then, money is distributed from higher levels of governments to local school boards in various ways. According to the Tenth Amendment to the Constitution, the power to tax and spend for educational purposes is not delegated to the United States, in other words, the federal government; instead, authority over education is reserved to the states. With some variations, state legislatures have chosen to finance public schools by delegating to local school boards the authority to raise (by taxing real property) and spend money as well as supplementing local revenue with state funds allocated according to complex formulas. All in all, it is a local or community-controlled system.

This complex system has resulted in significant disparities in per pupil funding from state to state, and in most states, big disparities also exist between districts, due to the differences of property tax from community to community. Local school districts also receive federal financial assistance, which has certain effects of equalizing per pupil funding from state to state, but its equalization power is very limited due to the small proportion of federal funding in the total amount of school finance, usually less than 10%. Though the Supreme Court ruled that this kind of significantly different levels of per pupil expenditures did not violate the Fourteenth's Amendment's Equal Protection Clause, inevitably, it significantly affects the quality of education that students receive.

One of the aspects being affected by the system is school curriculum. In the United States, basic authority over schooling is reserved to the states, and state legislatures have been the primary source of the laws that shape the school curriculum. To different degrees, state shares control of the curriculum with state boards of education and local school boards, and

decides on standards, mandated subjects, course contents and perspectives, materials, and setting minimum course and credit requirements for high school graduation. Public schools generally have the legal authority which is delegated to them by the state to adopt and enforce their own curriculum within constitutional and state-set limits. School districts usually utilize the state standards as a broad overview to develop a localized curriculum. The traditional Three Rs (reading, writing, and arithmetic) have always been (and should be) put in the prior status. They are the core curricula of all states' requirements and regularly tested, from end-of-semester final exam to in-class pop quizzes, from national level NAEP to state-wide assessments. Coming with the important status, the Three Rs enjoy favorable treatment; it is a guarantee that a large proportion of the instructional expenditures goes to courses directly related to the Three Rs.

On the contrary, foreign language education is at a much more disadvantaged position. Even though more and more people have realized and recognized the benefits of foreign language competence, even till today, the general public in the United States still tends to consider foreign language learning as a high school requirement. However, state policies on foreign languages vary greatly. According to the 2014 to 2015 data, only eight states (Washington D.C. included) have foreign language graduation requirements; in 13 states, foreign language is one of the high school graduation requirements, but may be substituted by several other subjects, such as computer technology, performing arts, or a state-approved career and technology program; and as many as 30 states do not have foreign language graduation requirements at all. Some states require that school districts offer foreign language instruction at the secondary level, especially grades 9 to 12, because of the perception that foreign language credits are required for college admission, especially some prestigious colleges and universities. And in order to qualify for some specific scholarships, a student must have the experience of

studying one foreign language for at least two years. According to some public data released by some research institutes, in 2008, 15% of public elementary schools, 58% of public middle schools, and 91% of the public high schools offered foreign language instruction (Pufahl & Rhodes, 2011). Overall, only 18.5% of U.S. K-12 public school students enrolled in foreign language courses (ACTFL report).

Pfeffer and Salancik (1978) pointed out that, to cope with the environments, organizations evaluate and allocate resources according to their priorities and secure an adequate supply of resources that is crucial to their survival and adequate functioning. When there is a gap between stakeholders' demands and the resources available, conflict happens. In order to keep schools open and function as a public institution which depends on the limited funding, schools have to interact with other institutions, especially the "pressure groups" who play an important role in making policies and allocating resources. Schools cannot meet all the demands from all the interest groups; instead, schools tend to deal with the demands selectively, such as fulfilling law requirements, following school board resolutions, coping with interest groups to seek certain valued resources, and trying to "do a little bit everything" to gain and maintain support from all of their interest groups. "What the district favors" in this flow of external demands becomes what is most implemented.

This is the way how schools as organizations are externally controlled; meanwhile, schools' internal management, is sometimes merely "symbolic," and sometimes management may be "responsive," responding to environmental demands selectively (Pfeffer & Salancik, 1978). There is no doubt that schools want to offer the possibly best education to their students, but in the case where foreign language instruction is not a requirement from the state legislature, a school at a disadvantaged financial status is less likely to run rigorous foreign language

programs. It needs to concentrate its limited resources to the “core subjects,” such as the Three Rs, to guarantee its survival and adequate functioning; it might even give up foreign language programs as a whole or teach only basic and most demanding foreign languages. For instance, a high school with limited capabilities may only open and maintain foreign language classes that could meet the minimum number of students for its respective institution. This kind of decisions is more likely to be “responsive” to the general public’s demands while coping with the resources they can acquire. Comparatively, “rich” schools tend to be more willing to and able to run high-quality foreign language programs and offering multiple languages and more sessions of foreign language classes.

While organizations cope with environmental pressures and confront an environment of conflicting demands and varied resources, their actions are considered “effective” when they satisfy the demands of salient groups, and thus, permit the organization to acquire necessary resources (Pfeffer & Salancik, 1978). In their study, Wirt and Kirst (1982) called this kind of salient groups or pressure groups, “influential citizens.” In their book *Schools in Conflict*, Wirt and Kirst provided an overview of the political characteristics of school policymaking process, especially emphasized the turbulence of American schools with multiple constituencies, for example, parents, taxpayers, the minority groups, and teachers, posing demands relating to school finance, teachers’ and organizational power, students’ rights, and other concerns that are central to educational functioning. These groups, as well as the state-level and federal authorities who are policymakers and resource distributors, have strong influence on the shape of the local schools’ agenda. Who are the “influential citizens” in foreign language education? Among the vast array of interest groups, who supports foreign language education while who is against it? These will be the research questions to be explored in this dissertation.

## **Institutional Theory**

The essential aspect of institutional theory is that, instead of seeing organizations as independent actors responding to changes in their environments, it sees beyond that and concentrates on the “rules of the game” by which organizations operate, and on the increasingly international network of rule-setting institutions that pervade organizational and managerial life (Butler, 1997). Organizations are seen to be more than production systems; they are social and cultural systems. Schools as public institutes, from the day it appeared, have been surrounded and shaped by the environment.

Organizations’ efforts to achieve rationality with uncertainty and constraint from the environment, lead to homogeneity of structure, or employing DiMaggio and Powell (1983), institutional isomorphism. Isomorphism is a “constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions.” Following Meyer (1979) and Fennell (1980), DiMaggio and Powell (1983) maintain that there are two types of isomorphism: competitive and institutional. “Organizations compete not just for resources and customers, but for political power and institutional legitimacy, for social as well as economic fitness.” In Scott et al (2000)’s words, if organizations are to survive and thrive in their social environments, they not only require material resources and technical information, but also social acceptability and credibility.

Schools as organizations, need to follow the “game rules” in order to gain and maintain their legitimacy. The concept of legitimacy, from the point of sociology, is “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions” (Suchman, 1995,

p.574). In DiMaggio and Powell (1983)'s theory, institutional effects are diffused through a field of organizations by three important mechanisms: mimetic, normative, and coercive. Scott (1995) presented three pillars of institutional theory describing various methods of legitimizing the actions of organizations in their environments: cultural-cognitive, normative, and regulative. Each of the pillars provides a basis for legitimacy. The cultural-cognitive pillar is based on common beliefs, social action and symbolic interactionism. The general public has formed shared understanding and expectations on what public schools should do, while schools as institutes that serve the general public, operate and make daily decisions to meet the public needs so as to be recognized and culturally supported.

But what people experience as the relatively observable processes of deciding and acting is embedded in a structure also resting on the other two pillars (Butler, 1997). The normative pillar comprises normative structures by which compliance is obtained through social obligation. Schools face pressures brought about by professions. On one hand, legitimization is inherent in the licensing and crediting of educational achievements; for instance, teachers obtain their licensure through formal college education and legal procedures of license application. On the other hand, inter-organizational networks also help the spanning of organizations. School administrators and teachers developed norms during their formal education and professional training and brought them into schools. Inter-hiring of "interchangeable individuals who occupy similar positions across a range of organizations and possess a similarity of orientations and disposition" also encourages isomorphism and shape organizational behavior (Perrow, 1974). Therefore, the similarity among schools, such as department configuration, program design, teacher hiring, makes perfect sense. Very importantly, the similarity can also make it easier for schools to "attract career-minded staff, to be acknowledged as legitimate and reputable, and to fit

into administrative categories that define eligibility for public and private grants.” (DiMaggio & Powell, 1983)

The normative pillar leads to at least two facts to the current foreign language education field: the licensure requirement provides an entry path to the career for some teachers, but also sets blocks to the others, especially that for most states if not all, one has to reach the Advanced proficiency level minimum to be qualified as a foreign language teacher. It normally takes more than three or four years of formal college-level foreign language learning, and most of the time, some immersion experience through study abroad, for one to reach the Advanced proficiency level. Beyond that, one also has to take multiple required courses that are teacher-oriented before licensure application. “Shortage of qualified language teachers” (Phfahl & Rhodes, 2011) has been one of the top excuses why some schools do not offer foreign language instruction. On the other hand, theoretically, the similarity of teacher training programs, hiring “standards” as well as program designs makes teacher “mobility” possible and easier, and it is convenient for “rich” schools to “steal away” qualified teachers from other schools with offers of higher salary and better benefits.

Regulative pillar provides the basic coercive power, emanating especially from state controls in the case of public education in the United States. People’s actions are shaped, at least partially shaped by political and social forces that can confer them with legitimacy via policies or political support. Schools perform their duties within a network of laws and regulations, from federal and state constitution and statutes to federal and state regulations, from common laws to school board policies. These laws and regulations prohibit them from doing some things while permitting, empowering, or requiring them to do others (Imber, 2014). These laws and political process can also affect sociopolitical legitimacy by providing access to resources. Schools get

federal, state and local revenues, and allocate these resources under the guidelines of education finance law. Both the political support and financial resources are critical to schools. Rowan (1982) argued that districts were more likely to adopt and retain innovations (such as new programs) and personnel, when they were supported by “key members of the institutional environments of local systems,” specifically, by state and federal legislatures, state educational agencies, state-level professional associations, and teacher-training institutions. While in this era when the United States hasn’t reached a community’s commitment to foreign language education and made it a requirement for all students, state legislatures, specifically on foreign languages, compose the most typical regulative power, for instance, high school graduation requirements for foreign languages, and foreign language requirements for Honors/College Prep Diploma or Endowment policies in individual states.

A good illustration of the mimetic mechanism of institutional effect diffusion would be policy networks and innovation diffusion. To study the diffusion of foreign language programs, we can look at the issue from the state level and the regional level. Where there is a large population of a certain minority group, there is more likely to have the corresponding foreign language programs, for example, the Melting Pot states (including California, Florida, Hawaii, Illinois, New Jersey, New Mexico, New York, and Texas), especially California, has the most and largest Chinese programs in the United States because of the large population of Chinese immigrants and descendants in these states. Another relevant factor is the pressure groups that advocate foreign language programs in their state or region. In states or regions with a large population of immigrants and descendants of a certain origin, schools are more likely to offer the corresponding foreign language programs in response to the pressure and needs from the immigrant group; meanwhile, it is also natural and logical that these programs have bigger



opportunities to survive, grow, and even thrive thanks to their smaller recruiting pressure (of both students and teachers), better language and culture environment, and stronger community support.

Mintrom and Vergari (1998) examined if and how policy networks facilitated state-to-state diffusion of policy innovations. They found that greater involvement in policy networks significantly increased the likelihood of policy entrepreneurs achieving their legislative goals. There are two broad types of policy networks: 1) policy entrepreneurs operating at the state level who most often develop their ideas for policy innovation through their conversations and interactions with members of interstate or, in other words, *external policy networks*, and 2) intrastate or *internal policy networks* which are generally issue-specific and comprised of individuals with established connections to the local policymaking community, and perhaps have some connections to the broader external policy network relevant to the issue domain on which they focus.

The study (Mintrom & Vergari, 1998) also shows that policy networks are important resources that successful entrepreneurs draw upon when they develop and try to sell their policy ideas. External policy networks, composed of people across the nation, are important primarily for facilitating agenda setting, while making use of internal policy networks, which is made up of people in and around state government, is useful not only for agenda setting, but also for ensuring approval for policy innovations. However, another study conducted by Mooney (2001) found that regional effect on state policy diffusion was not exclusively constant and positive. The regional effect could change over the course of a diffusion because of changes of information available and changes in the need for that information that occurs in the social learning process. Early in the diffusion, having the policy recently adopted by a neighbor increases the information

available about both its policy and political consequences. However, as the policy diffuses, more factual information becomes available as more states gain experience with it. The new information tends to be more about the inevitable problems that occur when implanting an innovative policy. The neighbors of the states with the policy will be unlikely to adopt it. If the information available on a particular subject is nationalized, through think tanks, national interest groups, federal legislation, so on and so forth, then learning from neighboring states may be no more common than learning from states across the country (Haider-Markel, 2001). Currently, foreign language education in the United States, especially in elementary and middle schools, as well as foreign language instruction of some less commonly taught languages, cannot be considered “nationalized” yet. Therefore, learning from adjacent states and adopting their successful experience is very likely to be the practice for some states when planning their foreign language programs.

Considering the geographical and demographic features of the United States, naturally, people put connections between regions and races. The migration patterns of the 1980s and early 1990s have formed three regions with distinct racial composition characteristics: Melting Pot (e.g. California, New York, Texas), New Sun Belt (e.g. Colorado, Arizona, Georgia), and Heartland (e.g. the Great Plains and most of the Midwest states). The situation has been changing after entering the new millennium. Frey (2014) called the pivotal racial changes now the country is experiencing “diversity explosion.” One of the key changes is the rapid growth of the “minorities”: Hispanics, African Americans, Asians, and other non-white races. According to Tavernise (2012), sometime after 2040, Whites will constitute a minority of all Americans. In other words, there will be no racial majority in the country. The United States is becoming a

more globalized, multiracial country than ever. It will also bring significant changes in the attitudes of individuals, the practices of institutions, and the nature of American politics.

Frey (2014) did some research on how the new racial demographics are and how it will remake the United States in various aspects. The shifts of the new racial demographics call attention to the need to improve access to formal education and job training for minority children. Yet, improving educational opportunities may be politically difficult given the cultural generation gap between the increasing diverse child population and a largely White older population. Great conflict seems to be inevitable: the aging White baby-boomer voters and the coming ethnically diverse new generations who represent the future can exacerbate the competition for public resources: Social Security and medical care that directly benefit the elderly, or programs for the youth, for instance, education. Therefore, states with strongly conservative political values may be more reluctant to investing more money to education so as to “protecting” the benefits of the conservative elderly.

On the other hand, immigration in recent decades not only has provided a growing labor force in the United States despite of the aging of the large baby-boomer generation, but also, the international heritage and languages of the new labor force entrants help connect the nation to an ever-expanding globalized economy. To realize these benefits, the diverse child population of today and tomorrow needs to be provided the skills and opportunities to succeed at jobs in an increasingly knowledge-based economy. Foreign language education does not only provide the youth critical language skills in this globalized era, but also can reserve and carry forward cultures of different racial/ethnic groups.

The three pillars are contributing, interdependent and mutually reinforcing ways to a powerful social framework. Resources are not abundant enough to sustain all organizational

variations; those organizations that can obtain resources or are located in munificent environments have a competitive advantage for organizational survival (Aldrich, 1979). Giddens (1979, 1984) and Sewell (1992) underlined the importance of including material resources in any conception of social structures so as to take into account asymmetries of power. Rules and norms, if they are to be effective, must be backed with sanctioning power. Conversely, those possessing power in the form of excess resources seek authorization and legitimation for its use. And cultural beliefs, or schemas in Stewell's (1992) formulation, to be viable, must relate to resources. In terms of foreign language education, a lot of components act together to influence how schools make decisions upon their foreign language programs. A focus on the interdependence of organizations or practices, and their environments, such as norms, structures, resources, and information (Scott, 1998), can help inform our understanding of the diffusion patterns of foreign language programs in U.S. K-12 public schools.

### **Chapter 3: Data and Method**

This dissertation relied on various data sources to construct a state-level panel dataset for the school years of 2004 to 2005, 2007 to 2008, and 2014 to 2015, focusing on foreign language enrollments in all 50 states (not including Washington D.C. due to data availability) for U.S. K-12 public schools. Sources and descriptions for all measures are shown in Table 4.

#### **Total Foreign Language Enrollments by State and Enrollments for Major Languages by State**

To investigate current foreign language enrollment status, ACTFL has conducted two tremendous projects thus far aiming to provide more detailed and accurate information than previous projects. These projects targeted the 2007 to 2008 and 2014 to 2015 school years for data collection due to the time it takes states to release data (because many states release this information one to three years after collection). To investigate changes in foreign language enrollments, the 2007 to 2008 project also collected data from the 2004 to 2005 school year. These two projects gathered data on public school students in grades kindergarten (K) through 12 enrolled in formal and specific language courses (e.g., Spanish, German, French, Latin, Chinese, Japanese, Russian, ASL, Arabic, and so on), as opposed to nonspecific language courses, for example, Exploratory World Language which provides only introductory exposure to the language but not instruction for proficiency, or heritage, community-based, after-school and weekend-and summer school language programs.

According to ACTFL reports (2010 and 2017), 24 states did not provide 2004 to 2005 data (Note by author: For instance, Kansas did not start collecting state-wide foreign language enrollment data until 2013), 17 states did not provide 2007 to 2008 data, and 22 states did not

provide 2014 to 2015 data. In the Methodology session of the reports, it described that, for these states, foreign language course enrollments were estimated with generalized (fixed, or mixed, effects) linear models with a logistic link function and binomial sampling assumptions, based on variables such as overall student enrollments, schools in the state, school districts in the state, state and other organization reported foreign language teachers, SAT and AP foreign language test takers, people who speak a certain foreign language at home, and so on. It is widely recognized that the ACTFL data are the most accurate data thus far when coming to foreign language enrollment study, and they are public resources and accessible. Because of these reasons, this dissertation adopted these data to support the analysis.

It became more and more clear that there are huge gaps of foreign language enrollments among different states, and different languages also face quite different status. This dissertation examines the components that shaped the current state disparities of foreign language enrollments. Regarding different languages, this dissertation only focuses on seven languages, including Chinese, French, German, Japanese, Latin, Russian, and Spanish considering their representativeness and data availability.

## **Predictors**

What factors would lead to schools and individual students choosing to include foreign language programs in their curriculum, and favoring a certain foreign language over another one? In this dissertation, several state characteristics hypothesized as pertaining to this question were examined. The first one, state economy disparities which is related to human capital, used state GDP information. The GDP information, including the total state GDP, and GDP contributions from farms and trade respectively, was collected by U.S. Department of

Commerce. Per person GDP by state, percentages of farms and trade contributions in total state GDP, and percentages of state exports in the nation were calculated.

The second one, namely adult education and social and cultural capital disparities, includes six predictors: parents' financial capital available to support their children, is represented by percentages of poor population and average total personal income by state; to take racial disadvantages into consideration, data on percentages of African Americans and percentages of Hispanics by state were collected; percentages of single parents by state were chosen as a proxy for social and cultural capital; and data on percentages of population with college degree or higher were used to measure adult human capital. These data are state means for adults from 30 to 50 years old, who participated in the American Community Survey (ACS), and generated from individual-level data available from the Integrated Public-Use Microdata Series (IPUMS).

To measure the influence of resource dependence, the dissertation used Common Core of data (CCD) collected by National Center for Education Statistics (NCES): proportion of students with limited English proficiency and Individualized Education Program (IEP, namely in special programs), for whom learning a foreign language can be a bigger challenge, proportion of students located in urban and rural schools, and proportion of students with free and reduced lunch by state; and school total revenues per student (which is a combination of federal, state, and local sources), local revenues per student, and state revenues per student by state, and instruction expenditures per student by state. All the revenues data are adjusted to inflation.

The dissertation also used another four state-level characteristics as measurement under the framework of institutional theory: high school graduation requirements on foreign languages by state (with foreign language requirements or not), and Honors/College Prep Diploma or

Endowment policies on foreign languages by state (with foreign language requirements or not), both obtained from state Department of Education websites, capturing policy control upon organizations and individuals; percentages of Republicans in the state legislature, measuring the strength of conservative values; and percentages of student enrollments in different races (Asian, Hispanic, African American, and White) by state, representing race effects. Regional dummies were also created to test regional influence on foreign language programs, such as racial composition and policy networking.

## **Method**

Now go back to the research questions: which state characteristics influence the diffusion of foreign language enrollments in U.S. K-12 public schools? And more specifically, which state characteristics may have stronger effects on foreign language enrollments? To address these questions, this dissertation relied on regression with random-effects models using Stata. Fixed-effects and random-effects are two techniques commonly used to analyze panel data. The reason why the random-effects model is favored in this study is that, when only the impact of variables that vary over time is the focus of test, fixed-effects is the one to choose in that it removes the effects of those time-invariant characteristics (in this dissertation's case, such as the students' race and region predictors) so we can assess the net effects of the predictors on the outcome variable. While random-effects model assumes that the variation across entities is random and uncorrelated with the predictors included in the model, so its advantage is that time-invariant variables can also be included. This dissertation selected the random-effects technique because it was comparatively the unbiased and more efficient one.

The following models were created for different foreign languages:



$$Y_{it}: f(X_1 + X_2 + \dots + X_k) + \varepsilon_{it}, \text{ re} \quad (\text{Model 1})$$

$$Y_{it}: f(X_1 + X_2 + \dots + X_k) + \text{year dummies} + \varepsilon_{it}, \text{ re} \quad (\text{Model 2})$$

$$Y_{it}: f(X_1 + X_2 + \dots + X_k) + \text{year dummies} + \text{regional effects} + \varepsilon_{it}, \text{ re} \quad (\text{Model 3})$$

where  $i$ =state and  $t$ =year.  $Y_{it}$  denotes the dependent variable which is the percentage of a certain foreign language's enrollments.  $X$  represents the independent variables, in this case, state characteristics. Year dummies and regional effects are added into Model 2 and Model 3 and tested.  $\varepsilon_{it}$  is the error term. Because some of the variables from the same categories are correlated to some extent, the final models only keep 10 of the formerly mentioned state characteristics to be more efficient, namely percentages of Asian students, percentages of Hispanic students, percentages of adults with college degrees or higher, percentages of single parents, percentages of republicans in state legislature, state revenues per student (adjusted to inflation), high school graduation requirements on foreign languages, Honors/College prep diploma on foreign languages, percentages of trade in total state GDP, and percentages of rural and urban students.

Moreover, this dissertation combined the enrollments of French, German and Latin together due to their similarities: all three are traditionally taught and still popular languages but are gradually fading away in the new era for a variety of reasons. Japanese and Russian gained popularity for a short period because of economic and political reasons but have never reached sizeable enrollments. In recently years, with the arising of "new" foreign languages (such as Arabic, American Sign Language, Chinese, Hindi, and more), the lingering perception of the decline of Japanese economic power, and student body studying Russian still fairly small, Japanese and Russian programs have been struggling to survive, some seeing slight increase while a lot of the programs gradually disappearing in public schools. For these reasons, this dissertation analyzed the enrollments of Japanese and Russian jointly. Spanish has been

dominating foreign language enrollments consistently and continuing to attract the largest enrollments in the United States. According to the 2017 ACTFL report, Chinese language instruction is currently widely spread within school system in 50 states (except for South Dakota) and Washington D.C.. While Chinese enrollments had the largest percentage growth (increasing by 195% from school year 2004 to 2005, 0.042%, to school year 2007 to 2008, 0.124%, and 237% from school year 2007 to 2008, 0.124%, to school year 2014 to 2015, 0.420%) in the past years, its raw enrollment percentages are still fairly small (less than 1% of the total student population). Considering the unique status of Spanish and Chinese, and also because they represent traditional foreign languages and new foreign languages that are taught in the United States respectively, this dissertation analyzed their enrollments separately. The analysis results of state characteristics on foreign language enrollments are shown in multiple Tables in Chapter 4. All estimates are based on standardized scores.

Table 4: Measures Used in the Analysis (State-level)

Measure	Source	Variable Used	Description	Mean			Standard deviation		
				2004	2007	2014	2004	2007	2014
Total national foreign language enrollments	ACTFL reports	flenrollment	Total national foreign language enrollments by state	172362.5	178013.5	212077.5			
Total student enrollments	NCES	student_population	Total student enrollments by state	970135.8	976638.3	998628.8			
Percent of total foreign language enrollments	ACTFL reports	flenroll_pct	Proportion of student enrollments of all world language by state	.182194	.182594	.194552	.065205	.054593	.082068
Percent of enrollments for Chinese	ACTFL reports	chinese_pct	Proportion of student enrollments for Chinese by state	.0002569	.0013215	.0042151	.000350	.002515	.002533
Percent of enrollments for French	ACTFL reports	french_pct	Proportion of student enrollments for French by state	.0293266	.0255205	.0252671	.002205	.0019213	.0015788
Percent of enrollments for German	ACTFL reports	german_pct	Proportion of student enrollments for German by state	.009383	.0096909	.0069493	.0010524	.0010092	.0008766
Percent of enrollments for Japanese	ACTFL reports	japanese_pct	Proportion of student enrollments for Japanese by state	.0017666	.0022467	.0014959	.0006235	.0008657	.0002919
Percent of enrollments for Latin	ACTFL reports	latin_pct	Proportion of student enrollments for Latin by state	.0050698	.0047273	.0037511	.0008438	.0007629	.0005359
Percent of enrollments for Russian	ACTFL reports	russian_pct	Proportion of student enrollments for Russian by state	.00023	.0003665	.000212	.00004	.0001705	.0000262
Percent of enrollments for Spanish	ACTFL reports	spanish_pct	Proportion of student enrollments for Spanish by state	.130887	.1288483	.1301893	.046485	.041133	.036636
School total revenues per student	NCES	revenue_total	School total revenues per student by state	10005.48	12007.98	13361.1	298.783	388.6664	538.0854
Local revenues per student	NCES	revenue_local	Local resources per student by state	4112.9	4898.08	5473.98	253.8987	309.9202	385.0351
Percent of local revenues per student in total	NCES	pct_localrev	Proportion of local revenues per student in total revenue by state	40.828	40.422	40.712	1.916238	1.909801	1.962873

Measure	Source	Variable Used	Description	Mean			Standard deviation			
				2004	2007	2014	2004	2007	2014	
State revenues per student										
State revenues per student	NCES	revenue_state	State revenues per student by state	4920.04	6067.82	6731.28	248.3357	304.166	417.0005	
Percent of state revenues per student in total	NCES	pet_staterev	Proportion of state revenues per student in total revenue by state	49.124	50.614	50.136	1.79217	1.782802	1.881647	
Instructional expenditures per student	NCES	inst_expend	Instructional expenditures per student by state	5335.18	6302.9	7102.26	181.7569	234.5239	331.1793	
Percent of instructional expenditures per student in total	NCES	pet_inst_expend	Proportion of instructional expenditures per student in total expenditure by state	60.922	60.306	59.68	.3682866	.3849984	.4292661	
High school foreign language graduation requirements	State Department of Education websites	hs_grad_require	High school foreign language graduation requirements by state							
Honors/College Prep Diploma or Endorsement policies	State Department of Education websites	honors_college_prep	Honors/College Prep Diploma or Endorsement policies by state							
Percentage of republican in state legislation	State legislation websites	republic_pct	Proxy for conservative values in different states	.5042468	.463444	.4444628	.0216533	.0209777	.021409	
Percentage of Asian students	NCES	asian_student	Proportion of Asian students in total enrollments	.043538	.045902	.039156	.0143335	.0143569	.0065219	
Percentage of Hispanic students	NCES	hispanic_student	Proportion of Hispanic students in total enrollments	.113296	.128414	.164652	.0174961	.0183707	.0194644	
Percentage of African American students	NCES	black_student	Proportion of African American students in total enrollments	.145276	.14406	.134698	.0187743	.018235	.0171938	
Percentage of White students	NCES	white_student	Proportion of White students in total enrollments	.668816	.646838	.59512	.0251135	.0256566	.0259044	
Percentage of students with special programs	NCES	special_program	Proportion of students with limited English proficiency and IEP	.2095232	.2013996	.2008942	.0078941	.0056354	.0056501	

Measure	Source	Variable Used	Description	Mean			Standard deviation		
				2004	2007	2014	2004	2007	2014
Percentage of urban and rural students	NCES	city_rural_pct	Proportion of students located in large cities and rural districts	.3791685	.385372	.3940853	.0186403	.018287	.0182561
Ratio of students with free and reduced lunch	NCES	free_reduced	Ratio of students with free and reduced lunch by state	37.49394	40.22618	47.7971	1.61514	1.43684	1.37104
Per person GDP	U.S. Department of Commerce	per_person_gdp	Total GDP per person by state	40847.92	46403.38	52649.06	1043.484	1290.346	1485.964
Percent of farm GDP in total	U.S. Department of Commerce	pet_farm_gdp	Proportion of GDP contributions from farms in total GDP by state	.015726	.01306	.015762	.0025733	.0024538	.0028179
Percent of trade GDP in total	U.S. Department of Commerce	pet_trade_gdp	Proportion of GDP contributions from trade in total GDP by state	.123964	.12068	.118952	.0023655	.0025468	.0025968
Exports	United States Census Bureau	export_pct	State percentage of exports of total commodities in the nation	.018836	.018974	.019118	.0039768	.0038418	.0041857
Percentage of poor population (ages 30-50)	IPUMS, ACS	poverty_pct	Proportion of ages 30-50 at/below federal poverty line	.123304	.1220611	.1294402	.0048857	.00471	.00445
Percentage of African American (ages 30-50)	IPUMS, ACS	black_adult	Proportion of African Americans (ages 30-50)	.0750338	.0802835	.0834945	.0106545	.0115108	.0117374
Percentage of Hispanics (ages 30-50)	IPUMS, ACS	hispanic_adult	Proportion of Mexican, Cuban, Puerto Rican and other Hispanic (ages 30-50)	.0672965	.0810016	.0875132	.0110924	.0125306	.0129398
Percentage of single parent (ages 30-50)	IPUMS, ACS	singleparent	Family structure	.0944088	.0976176	.1016221	.0019311	.0019768	.0021618
Percentage of population with college degree (ages 30-50)	IPUMS, ACS	college_adult	Proportion of population with a bachelor's degree or higher (ages 30-50)	.1968317	.1967581	.1996816	.0047913	.0045369	.0044272
Average total personal income (ages 30-50)	IPUMS, ACS	income_adult	Inflation- and CWI-adjusted total persona income (ages 30-50)	38712.79	43947.7	44645.08	455.1507	516.9305	578.5077
West		west	AK, CA, HI, OR, WA						

Measure	Source	Variable Used	Description	Mean			Standard deviation		
				2004	2007	2014	2004	2007	2014
Mountain		mountain	AZ, CO, ID, MT, NV, NM, UT, WY						
Northeast		northeast	CT, DE, ME, MA, MD, NH, NJ, NY, PA, RI, VT						
Midwest		midwest	IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI						
South		south	AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA, WV						

## Chapter 4: Findings

The effects of each state characteristic on the diffusion of different foreign language enrollments in U.S. K-12 public schools are shown in tables below. These state-level characteristics are blind to within-state variation (which would be the research focus for regional or district-level components), but the analysis in this dissertation only aims to addressing the considerable between-state differences in foreign language enrollments and the reasons behind the scene. The multivariate models test the influential factors of the between-state differences and their influential power of foreign language enrollment patterns.

### Spanish

Hispanics are the largest minority group in the United States, with the majority of them being Spanish speakers, which made Spanish the second most widely spoken language in the United States. Besides that, 21 countries in the world (for instance, Spain, Mexico, Cuba, Argentina, Chile, Colombia, and so on) speak Spanish as their official language. In the United States, many professionals such as those in medicine, international business and trading, pharmaceuticals, the oil and gasoline industry, and other transportation technologies encompass extensive Spanish-speaking networks both locally and around the world, and Latin American countries (whose official language is mostly Spanish) are the most important trading partners to the United States. It is only logical that Spanish became and continues to be the most studied foreign language in the United States. Table 5 shows the effects of each state characteristics on the diffusion of Spanish enrollments in U.S. K-12 public schools.

Table 5: Estimates of Effects of State Characteristics on Spanish Enrollments Using Regression with Random Effects

Predictors	Spanish		
	Model 1	Model 2	Model 3

Percentages of Asian students	-0.185	-0.191	-0.013
	(0.123)	(0.123)	(0.124)
Percentages of Hispanic students	-0.129	-0.132	0.089
	(0.116)	(0.116)	(0.117)
Percentages of adults with college degree and higher	0.274**	0.271**	0.108
	(0.124)	(0.124)	(0.122)
Percentages of single parents	0.063	0.052	-0.029
	(0.122)	(0.123)	(0.125)
Percentages of republican in state legislature	0.007	0.004	0.161
	(0.113)	(0.113)	(0.112)
State revenues per student (\$)	0.093	0.096	0.061
	(0.124)	(0.124)	(0.119)
High school graduation requirements on foreign languages	0.430*	0.495**	0.424*
	(0.238)	(0.249)	(0.228)
Honors/College prep diploma on foreign languages	0.002	0.017	-0.027
	(0.233)	(0.234)	(0.219)
Percentages of trade in total state GDP	-0.033	-0.036	-0.114
	(0.116)	(0.115)	(0.104)
Percentages of rural and urban students	0.043	0.045	0.069
	(0.121)	(0.120)	(0.111)
<b>Year dummies</b>			
2007		-0.010	-0.008
		(0.153)	(0.152)
2014		-0.132	-0.105
		(0.163)	(0.161)
<b>Regional effects</b>			
South			0.833
			(0.409)
West			0.022
			(0.417)
Northeast			1.484***
			(0.418)
Midwest			1.032***
			(0.351)
<b>Constant</b>	-0.119	-0.096	-0.875
	(0.139)	(0.160)	(0.303)

Note: Standard errors are in parentheses. Estimates are based on standardized scores.

\*\*\*  $p < 0.010$ , \*\*  $p < 0.050$ , \*  $p < 0.100$ .



Model 1 shows effects of the 10 selected state characteristics on Spanish enrollments. The R-squared values of this model are Within=0.0014, Between=0.3250, and Overall=0.1771. Two characteristics showed significant effects. The effect of percentages of adults with college degrees or higher was positive ( $\beta=0.274$  in standard deviation units,  $p\leq 0.050$ ), which suggests that one standard deviation increase in percentages of adults with college degrees or higher was associated with a 0.274% ( $p\leq 0.050$ ) increase in Spanish enrollments on average. This result is consistent with our expectations that more educated parents, who in general are in higher social class and possess more human capital as well as valuable social and cultural capital, are more likely to get involved in their children's education, and encourage and provide assistance and resources for their children to take courses like foreign languages which are not mandatory but can be highly beneficial academically and for their future career. When needed, these parents would act as "pressure groups" to advocate and pressure schools to offer programs that they see potential benefits to their children's future development and career, and influence school resource allocation to these programs, in this case, foreign language instruction, especially Spanish programs. According to Pufahl and Rhodes' (2011) *Foreign Language Instruction in U.S. Schools* report, the 2008 survey data revealed that one of the aspects of inequities in access to foreign language education in U.S. K-12 schools was that, languages were offered in smaller percentages in schools whose students were from lower socioeconomic backgrounds, which is in line with the analysis result of this study.

High school graduation requirements on foreign languages is the next predictor with a significant effect on Spanish enrollments. When there were high school graduation requirements on foreign languages in a state, students who enrolled in Spanish were likely to increase by 0.430% ( $p\leq 0.100$ ) on average compared to states with no such requirements, also supporting our

expectations. The ACTFL report (2017) also found that graduation requirements, along with other aspects of state-level education policies, impacted the overall number of language learners at the state level. Comparatively, Honors/College prep diploma on foreign languages showed a positive effect ( $\beta=0.002$ ) but not large enough to be significant.

High school graduation requirements provide basic coercive power and are a typical regulative method how states emanate controls over public education. By political and social forces, schools are obligated to offer foreign language programs to maintain their legitimacy; meanwhile, schools are granted financial resources via policies and political support. With both the regulative requirements and the guaranteed resource support (to make the programs available and sometimes even exciting), students are required or strongly encouraged to study foreign languages. To merely meet the graduation requirements, it is not surprising that more students chose to learn Spanish (over the other foreign languages) which is not only the most widely offered foreign language in U.S. K-12 schools, but also well recognized as the most useful for U.S. students, and the easiest to learn for English native speakers. In comparison, Honors/College prep diploma on foreign languages did show some positive effects on urging students who planned to pursue more prestigious higher education to dedicate more to foreign language learning in high school, but the coercive power was comparatively much weaker and insignificant.

Model 2 shows effects of the 10 state characteristics on Spanish enrollments when taking year dummies into consideration. The three R-squared values are Within=0.0022, Between=0.3283, and Overall=0.1824. Similar to Model 1, the effect of percentages of adults with college degrees or higher was positive, though the effect became slightly weaker ( $\beta=0.274$  in Model 1, and  $\beta=0.271$  in Model 2;  $p \leq 0.050$  in both models). This is understandable in that the

newly added predictors (the year dummies) “shared” and took away some of the effects. The effect of high school graduation requirements on foreign languages remained significant, and it became even stronger ( $\beta=0.430$ ,  $p\leq 0.100$  in Model 1;  $\beta=0.495$ ,  $p\leq 0.050$  in model 2). The two significant effects were likely driven by the similar reasons as in model 1. Neither of the year dummies were significant, which is consistent with our expectations. Even though there were some dramatic changes of Spanish enrollments in certain states, for instance, Massachusetts had 26.58% of K-12 public school students who enrolled in Spanish programs in the school year of 2004 to 2005. The numbers dropped down to 15.09% in the school year of 2007 to 2008, and 11.24% in 2014 to 2015. While in Delaware, there were only 9.98% of K-12 public school students learning Spanish at school in the school year of 2004 to 2005. The numbers grew into 14.91% in 2007 to 2008, and 24.39% in 2014 to 2015. The newly launched Spanish Immersion programs in multiple school districts in August 2013 contributed large to the almost 10% increase of Spanish enrollments in Delaware. Overall, the national mean value of Spanish enrollments has been fairly steady (between 13% to 14%), and the small changes were not significant.

One step further from Model 2, Model 3 shows effects of the 10 state characteristics on Spanish enrollments when both year dummies and regional effects are included in the analysis. The R-squared values of Model 3 are Within=0.0062, Between=0.5332, and Overall=0.3261. The effect of percentages of adults with college degrees or higher became very weak and insignificant. At the same time, high school graduation requirements on foreign languages continued to show a positive and significant effect ( $\beta=0.424$ ,  $p\leq 0.100$ ), which once again proved the coercive power of state policies.

Model 3 also proves that regional effects indeed influenced the diffusion pattern of Spanish enrollments. The analysis results showed that students who enrolled in Spanish in Northeast region were 1.484% more than students who enrolled in Spanish in Mountain region on average ( $\beta=1.484$ ,  $p\leq 0.010$ ). For instance, during the school year of 2014 to 2015, as shown in Table 6, among the six states that had more than 17% of K-12 public school students enrolled in Spanish, four of them were in Northeast region: Delaware, 24.39%; New Jersey, 20.73%; New York, 19.81%; and Maryland, 17.89%. The effect of Midwest region was also significant: students who enrolled in Spanish in Midwest region were 1.032% more comparing to the Mountain region ( $\beta=1.032$ ,  $p\leq 0.010$ ), such as Wisconsin and Michigan, with 23.11% and 15.46% Spanish enrollments respectively. The Mountain region had the smallest percentage of Spanish enrollments overall. Three out of four states that had less than 9% of Spanish enrollments in K-12 public school were in the Mountain region: Montana, 8.23%; Colorado, 8.36%, and Idaho, 8.87% (Arkansas, 7.43%, had the smallest Spanish enrollments in K-12 public schools in the nation during the school year of 2014 to 2015).

Table 6: Percent of Spanish Enrollments by State (2004-2005, 2007-2008, and 2014-2015)

State	Percent of Spanish Enrollments in 2004-2005	Percent of Spanish Enrollments in 2007-2008	Percent of Spanish Enrollments in 2014-2015
Alabama	7.49%	5.89%	14.02%
Alaska	9.61%	15.62%	10.99%
Arizona	10.15%	8.18%	9.20%
Arkansas	9.01%	9.40%	7.43%
California	9.59%	9.86%	10.46%
Colorado	12.36%	12.81%	8.36%
Connecticut	11.04%	12.44%	13.43%
Delaware	9.98%	14.91%	24.39%
Florida	12.52%	12.91%	17.11%
Georgia	12.46%	13.88%	16.81%
Hawaii	6.67%	6.00%	12.16%
Idaho	8.05%	8.46%	8.87%
Illinois	12.25%	11.56%	9.90%
Indiana	10.67%	10.74%	11.74%

<b>State</b>	<b>Percent of Spanish Enrollments in 2004-2005</b>	<b>Percent of Spanish Enrollments in 2007-2008</b>	<b>Percent of Spanish Enrollments in 2014-2015</b>
Iowa	14.55%	13.99%	12.83%
Kansas	10.95%	12.70%	12.09%
Kentucky	9.09%	13.53%	11.19%
Louisiana	5.40%	8.59%	10.04%
Maine	18.41%	16.60%	10.56%
Maryland	17.15%	18.10%	17.89%
Massachusetts	26.58%	15.09%	11.24%
Michigan	10.22%	10.88%	15.46%
Minnesota	13.33%	14.88%	14.69%
Mississippi	6.01%	6.88%	13.15%
Missouri	11.70%	14.26%	10.50%
Montana	18.94%	8.76%	8.23%
Nebraska	15.15%	19.20%	14.25%
Nevada	7.34%	7.54%	9.50%
New Hampshire	19.75%	7.13%	11.49%
New Jersey	19.47%	18.41%	20.73%
New Mexico	11.75%	7.55%	11.62%
New York	18.11%	21.45%	19.81%
North Carolina	18.74%	17.96%	15.41%
North Dakota	12.23%	16.28%	13.55%
Ohio	10.64%	12.45%	11.98%
Oklahoma	13.03%	13.05%	9.80%
Oregon	11.30%	10.05%	9.47%
Pennsylvania	13.07%	14.14%	12.06%
Rhode Island	18.89%	9.62%	15.50%
South Carolina	18.07%	19.57%	16.86%
South Dakota	14.79%	19.82%	12.73%
Tennessee	10.53%	8.75%	15.72%
Texas	15.02%	16.77%	15.39%
Utah	7.10%	9.86%	11.19%
Vermont	22.96%	9.48%	13.00%
Virginia	18.79%	11.49%	10.96%
Washington	12.17%	13.70%	10.17%
West Virginia	13.08%	16.97%	10.67%
Wisconsin	19.37%	20.46%	23.11%
Wyoming	8.92%	15.64%	11.15%
<b>Total</b>	<b>13.12%</b>	<b>13.34 %</b>	<b>13.61%</b>

*Note.* Adopted and generated from “Foreign Language Enrollments in K-12 Public Schools: Are Students Prepared for a Global Society?” by American Council on the Teaching of Foreign Languages, 2010, and “The National K-12 Foreign Language Enrollment Survey Report,” by American Council on the Teaching of Foreign Languages, 2017.

There are several potential reasons that could explain these results. For instance, the Northeast and Midwest regions are comparatively more affluent than the Mountain region in general. Therefore, states in these two regions would have more resources (and be more willing) to allocate to schools, which provides critical resources for Spanish programs to grow. Meanwhile, richer states typically have richer parents who play critical roles in their children's education as we have discussed before. The Northeast and Midwest states are comparatively "Whiter," demographically, and "White" population may tend to favor "European" languages such as Spanish, French, German, and Latin. Another reason may be that there have been some very mature and successful Spanish programs in the Northeast and Midwest regions, especially in some Melting Pot centers, such as big cities like New York City and Chicago where a large number of immigrants reside. Through policy networks and innovation diffusion, adjacent states in these regions might have learned from their successful experience, developed their own programs and made progress in their foreign language education or even caught up, which also illustrates the mimetic mechanism of institutional effect diffusion.

To sum up, analysis results from the three models above suggest that, during school years of 2004 to 2005, 2007 to 2008, and 2014 to 2015, parents' education, state policies, and regions were associated with disparities of Spanish enrollments in U.S. K-12 public schools. Despite some big changes for some individual states, there were no significant changes for the national average enrollments of Spanish across the three years under study. None of the other state characteristics showed a significant effect on Spanish enrollments. Parents' education which leads to more parental involvement in children's education was proved to be related to higher percentages of Spanish enrollments. The only factor that was consistently significant and showed a positive effect was state high school graduation requirements on foreign languages, which

proved the strong power of coercive compliance with legal mandates (DiMaggio and Powell, 1983; Tolbert and Zucker, 1983).

### **French, German, and Latin**

French is the official language of 29 countries (such as France, Canada, Belgium, Democratic Republic of the Congo, Cameroon, Haiti, and so on), which puts it in the second place behind English. French is the only official language for 13 of these countries, and the co-official language of 16 of these countries. Besides the advanced German technologies and the prosperous German economy, German has the largest number of native speakers in the European Union, far more than English, Spanish, and French. Latin, as an ancient language with many important direct descendants (for instance, French, Spanish, Italian, Portuguese and more), is also widely recognized that learning Latin can help improve a person's English composition because English words have many Latin origins. In a nutshell, there are some great reasons that French, German, and Latin have been the next three traditionally widely taught and learned foreign languages in the United States after Spanish.

Table 7: Estimates of Effects of State Characteristics on French, German, and Latin Enrollments Using Regression with Random Effects

<b>Predictors</b>	<b>French, German and Latin</b>		
	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Percentages of Asian students	-0.241**	-0.244**	-0.093
	(0.112)	(0.112)	(0.109)
Percentages of Hispanic students	-0.399***	-0.399***	-0.299***
	(0.108)	(0.108)	(0.105)
Percentages of adults with college degree and higher	0.451***	0.449***	0.256**
	(0.110)	(0.110)	(0.107)
Percentages of single parents	0.057	0.054	0.066
	(0.107)	(0.108)	(0.108)
Percentages of republican in state legislature	-0.063	-0.063	0.095
	(0.100)	(0.100)	(0.097)
State revenues per student (\$)	0.105	0.108	0.011

	(0.111)	(0.112)	(0.105)
High school graduation requirements on foreign languages	0.057	0.071	-0.046
	(0.204)	(0.215)	(0.195)
Honors/College prep diploma on foreign languages	0.035	0.041	0.164
	(0.207)	(0.208)	(0.191)
Percentages of trade in total state GDP	0.103	0.103	0.092
	(0.104)	(0.104)	(0.092)
Percentages of rural and urban students	0.052	0.052	0.151
	(0.112)	(0.112)	(0.100)
<b>Year dummies</b>			
2007		-0.001	0.001
		(0.119)	(0.118)
2014		-0.026	-0.018
		(0.128)	(0.126)
<b>Regional effects</b>			
South			-0.142
			(0.365)
West			-0.168
			(0.377)
Northeast			1.222***
			(0.374)
Midwest			0.316
			(0.318)
<b>Constant</b>	-0.032	-0.096	-0.342
	(0.126)	(0.160)	(0.270)

Note: Standard errors are in parentheses. Estimates are based on standardized scores.

\*\*\*  $p \leq 0.010$ , \*\*  $p \leq 0.050$ , \*  $p \leq 0.100$ .

This session addresses the combined effects of these three traditionally taught and learned foreign languages in the United States but also considered more “special” than Spanish, as shown in Table 7. The R-squared values of Model 1 are Within=0.0233, Between=0.4656, and Overall=0.3594. In this model, among the 10 state characteristics, three showed significant effects on French, German and Latin enrollments. The factor percentages of adults with college degrees or higher continued to have a significant and highly positive effect, and it showed an even stronger effect than it had on Spanish enrollments (For French, German and Latin,  $\beta=0.451$



in standard deviation units,  $p \leq 0.010$ ; for Spanish,  $\beta = 0.274$ ,  $p \leq 0.050$ ). When percentages of adults with college degrees or higher increased by one standard deviation, students who enrolled in French, German, and Latin were likely to increase by 0.451% on average. Considering the fact that French, German and Latin have been gradually fading away in U.S. K-12 public schools, their enrollments, on the contrary, increased for students whose parents received advanced degrees. The strong power of parental involvement in children's education was once again proved. In addition, enrollments of German, French, and Latin are proved to be more sensitive to parental involvement than Spanish enrollments.

The effect of high school graduation requirements on foreign languages remained positive ( $\beta = 0.057$ ) but not significant in this model. The possible reason is that the total percentages of students who enrolled in French, German, and Latin were fairly small (in only a few states more than 5% but less than 10%, and in most states less than 5%), and the coercive power of state policies showed some effect but was not strong enough to be significant. It was also an evidence that Spanish was considered the most "useful" foreign language to the majority of the Americans. Effects of both the percentages of Asian students ( $\beta = -0.241$ ,  $p \leq 0.050$ ) and Hispanic students ( $\beta = -0.399$ ,  $p \leq 0.010$ ) were significant and negative. It was a surprising outcome that Asian students, the group of "model students" in the eyes of the general public, were not so interested in learning French, German and Latin. One possible explanation is that, Asian students may not be interested in these traditionally considered "European languages." Instead, "Asian languages" may draw more of their attention. This hypothesis may be supported by that, in all three models, effects of percentages of Asian students on Spanish enrollments (Model 1,  $\beta = -0.185$ ; Model 2,  $\beta = -0.191$ ; Model 3,  $\beta = -0.013$ ) were all negative as well, though the effects were not big enough to be significant. This issue will be discussed in more details

later when addressing what components formed the patterns of Chinese and Japanese enrollments.

Model 1 also showed that one standard deviation increase in percentages of Hispanic students was related to 0.399% decrease of French, German, and Latin enrollments on average in the three school years under test. This test result is consistent with the hypothesis. States that have greater percentages of Hispanic students may end up with less percentages of French, German and Latin learners. A lot of research, both old and fairly new, has proved the disadvantaged status that Hispanic students (as well as African-American students) had in education due to persistent gaps in the long-existing discriminations and segregations, limited access to education resources, community instability, lower family income, parenting behaviors as well less parental involvement and efficacy (Arias, 1986; Manguson and Waldfogel, 2005; Brooks-Gunn and Markman, 2005). Together with other important obstacles, such as lower test scores, poor health care, and lower teacher quality, Hispanic students were inevitably put in a more disadvantaged position than the mainstream student population in foreign language learning, in this case, particularly French, German, and Latin. The test results of effects of state characteristics on Spanish enrollments showed that, percentages of Hispanic students showed a negative but insignificant effect on Spanish enrollments, which once again proved the different status of Spanish and French, German, and Latin in U.S. K-12 public schools, and enrollments of French, German, and Latin were more sensitive to racial disadvantages than Spanish enrollments.

Compared to Model 1, Model 2 added year dummies to the test. The R-squared values of Model 2 are Within=0.0225, Between=0.4679, and Overall=0.3609. The analysis outcome turned out to be similar to Model 1, and all three predictors with significant effects in Model 1

were also significant in Model 2. The effects did not change much, either: the effect of percentages of adults with college degrees or higher only got a little bit stronger ( $\beta=0.451$  in Model 1, and  $\beta=0.499$  in Model 2;  $p\leq 0.010$  in both models), percentages of Hispanic students had the same negative effects in both models ( $\beta=-0.399$ ,  $p\leq 0.010$ ), and the negative effect of percentages of Asian students became slightly stronger ( $\beta=-0.241$  in Model 1, and  $\beta=-0.244$  in Model 2;  $p\leq 0.050$  in both models). It was the same as the test results of Spanish enrollments, and neither of the year dummies showed a significant effect, which indicates that even though French, German, and Latin programs have been gradually shrinking in U.S. K-12 public schools in general, unfortunately, and it is especially obvious in some school districts or buildings, looking at the big picture, the general trend across the nation is that these three languages still attracted adequate students, and their decrease of enrollments were not significant, at least during the three school years under study.

Model 3 included the region effects in the analysis. The three R-squared values of this model are Within=0.0338, Between=0.6652, and Overall=0.5167. The effect of percentages of Asian students was still negative but turned weaker and insignificant. Percentages of Hispanic students ( $\beta=-0.299$ ,  $p\leq 0.100$ ) and adults with college degrees or higher ( $\beta=0.256$ ,  $p\leq 0.050$ ) continued to show significant effects, very likely for the reasons as in Model 1, though the effects of both the characteristics became comparatively weaker as expected due to the newly added variables which “shared” and took away some of the power of influence.

For French, German, and Latin enrollments, regions also mattered, as how they influenced Spanish enrollments. Northeast region occupied the leading status in these three languages’ learning. Students who enrolled in French, German, and Latin in Northeast region were 1.222% more than students who enrolled in these three languages in Mountain region

( $\beta=1.222$ ,  $p\leq 0.010$ ) on average. For instance, as shown in Table 8, the national average percentage of French enrollments in K-12 public schools in 2014 to 2015 were 2.38%. All four states that had more than 4% of French enrollments were in the Northeast region: Vermont, 7.74%; Massachusetts, 4.31%; Maryland, 4.10%; and New Jersey, 4.06%. While among the states in Mountain region, only Utah (2.55%) and Wyoming (2.41%) had French enrollments slightly higher than the national level (2.38%), and all the other states in this region had French enrollments lower than the national mean: Colorado, 2.22%; Idaho, 2.08%; and Montana, 1.99%. Three of the states had less than 1.50% K-12 public school students enrolled in French: New Mexico, 1.22%; Nevada, 1.29%; and Arizona, 1.34%.

Table 8: Percent of French Enrollments by State (2004-2005, 2007-2008, and 2014-2015)

<b>State</b>	<b>Percent of French Enrollments in 2004-2005</b>	<b>Percent of French Enrollments in 2007-2008</b>	<b>Percent of French Enrollments in 2014-2015</b>
Alabama	1.29%	0.92%	2.80%
Alaska	4.58%	1.19%	1.69%
Arizona	0.00%	1.53%	1.34%
Arkansas	1.58%	1.53%	1.01%
California	1.93%	1.93%	1.59%
Colorado	2.52%	1.48%	2.22%
Connecticut	2.90%	2.85%	3.86%
Delaware	3.11%	2.38%	3.57%
Florida	2.37%	2.33%	2.06%
Georgia	3.60%	3.07%	3.41%
Hawaii	1.70%	0.69%	1.91%
Idaho	1.58%	1.51%	2.08%
Illinois	1.50%	2.01%	1.75%
Indiana	2.58%	2.25%	2.22%
Iowa	1.94%	1.62%	1.35%
Kansas	2.32%	2.25%	1.74%
Kentucky	2.51%	2.78%	1.58%
Louisiana	2.94%	6.94%	2.85%
Maine	7.43%	5.75%	2.74%
Maryland	4.75%	4.48%	4.10%
Massachusetts	4.40%	3.54%	4.31%
Michigan	1.33%	2.19%	2.70%
Minnesota	2.62%	2.18%	2.14%
Mississippi	1.54%	1.26%	2.50%
Missouri	3.17%	3.28%	2.39%

State	Percent of French Enrollments in 2004-2005	Percent of French Enrollments in 2007-2008	Percent of French Enrollments in 2014-2015
Montana	1.25%	1.94%	1.99%
Nebraska	1.86%	2.23%	1.97%
Nevada	0.95%	0.89%	1.29%
New Hampshire	3.63%	4.50%	3.34%
New Jersey	5.26%	4.26%	4.06%
New Mexico	2.71%	1.25%	1.22%
New York	4.40%	4.46%	3.16%
North Carolina	2.79%	2.55%	2.27%
North Dakota	3.35%	4.50%	2.31%
Ohio	3.29%	3.21%	2.64%
Oklahoma	1.64%	1.52%	1.06%
Oregon	1.42%	1.97%	2.11%
Pennsylvania	3.99%	4.38%	3.14%
Rhode Island	4.77%	2.33%	3.36%
South Carolina	4.81%	4.06%	2.72%
South Dakota	5.09%	1.48%	2.19%
Tennessee	1.75%	1.71%	2.63%
Texas	1.71%	1.78%	1.57%
Utah	0.14%	2.38%	2.55%
Vermont	4.82%	2.12%	7.74%
Virginia	4.89%	2.62%	2.80%
Washington	2.04%	1.97%	2.27%
West Virginia	3.17%	3.54%	1.75%
Wisconsin	4.91%	4.05%	3.88%
Wyoming	5.77%	0.00%	2.41%
Total	2.70%	2.61 %	2.38%

*Note.* Adopted and generated from “Foreign Language Enrollments in K-12 Public Schools: Are Students Prepared for a Global Society?” by American Council on the Teaching of Foreign Languages, 2010, and “The National K-12 Foreign Language Enrollment Survey Report,” by American Council on the Teaching of Foreign Languages, 2017.

German and Latin programs were much smaller comparing to French programs, and their national average K-12 public school students’ enrollments were only 0.61% and 0.39% respectively in 2014 to 2015. Though the percentages were small, there were still over 540,000 K-12 public students studying German and Latin during the school year of 2014 to 2015. German programs did not show very clear regional features, however, in terms of Latin programs, Massachusetts, Vermont, Maine, New Hampshire, and New Jersey, all of which are in the Northeast region, led the Latin learning in the nation by showing the largest percentages of

Latin enrollments. None of the other regions had a significant effect, which means that the enrollments of French, German, and Latin were fairly even across regions, except the Northeast region for reasons similar to what has been discussed before in the Spanish session.

Overall, during school years of 2004 to 2005, 2007 to 2008, and 2014 to 2015, the enrollment patterns of French, German, and Latin in U.S. K-12 public schools were mainly shaped by parents' education, race, and region. Students whose parents earned advanced degrees were more likely to learn these three languages. Meanwhile, Asian and Hispanic students were less enthusiastic about French, German, and Latin learning. Among all the regions, the comparatively more affluent and "Whiter" Northeast region once again occupied the leading position in foreign language education. Years did not have significant effects, and neither did the other state characteristics. Among all the significant factors, parents' education had the strongest effect.

## **Chinese**

There are many compelling reasons to study Chinese for U.S. students as China has grown into the world's second largest economy and the largest trading partner to the United States, no need to mention the political reasons, and the competitions between the two countries in a wide range of aspects. The soaring popularity of Chinese language learning across the United States is remarkable in recent decades, and according to the national surveys (such as the ones conducted by ACTFL), Chinese now ranks the fourth most widely taught foreign language (after Spanish, French, and German) in the educational system in the United States, and its enrollments are continuously growing. The effects of each state characteristic on the diffusion of Chinese enrollments in U.S. K-12 public schools are shown in Table 9.

Table 9: Estimates of Effects of State Characteristics on Chinese Enrollments Using Regression with Random Effects

Predictors	Chinese		
	Model 1	Model 2	Model 3
Percentages of Asian students	-0.178*	-0.181*	-0.130
	(0.107)	(0.107)	(0.124)
Percentages of Hispanic students	-0.015	-0.018	-0.015
	(0.099)	(0.099)	(0.117)
Percentages of adults with college degree and higher	0.231**	0.228**	0.153
	(0.110)	(0.111)	(0.123)
Percentages of single parents	-0.095	-0.100	-0.059
	(0.110)	(0.111)	(0.127)
Percentages of republican in state legislature	-0.138	-0.138	-0.082
	(0.102)	(0.102)	(0.114)
State revenues per student (\$)	0.162	0.163	0.087
	(0.110)	(0.110)	(0.120)
High school graduation requirements on foreign languages	0.314	0.355	0.305
	(0.223)	(0.231)	(0.234)
Honors/College prep diploma on foreign languages	0.036	0.044	0.115
	(0.208)	(0.208)	(0.221)
Percentages of trade in total state GDP	-0.157	-0.159	-0.148
	(0.101)	(0.101)	(0.104)
Percentages of rural and urban students	-0.084	-0.083	-0.038
	(0.103)	(0.103)	(0.110)
<b>Year dummies</b>			
2007		-0.007	-0.006
		(0.167)	(0.167)
2014		-0.100	-0.100
		(0.175)	(0.176)
<b>Regional effects</b>			
South			-0.247
			(0.409)
West			0.035
			(0.412)
Northeast			0.408
			(0.418)
Midwest			0.049
			(0.348)
<b>Constant</b>	-0.102	-0.081	-0.137
	(0.122)	(0.150)	(0.303)

Note: Standard errors are in parentheses. Estimates are based on standardized scores.

\*\*\*  $p \leq 0.010$ , \*\*  $p \leq 0.050$ , \*  $p \leq 0.100$ .

Model 1 addresses effects of the 10 selected state characteristics on Chinese enrollments. The R-squared values of this model are Within=0.0059, Between=0.3969, and Overall=0.2123. Only two characteristics showed significant effects. Percentages of adults with college degrees or higher, the same as on Spanish, French, German, and Latin, had a positive and significant effect ( $\beta=0.231$  in standard deviation units,  $p\leq 0.050$ ). When the percentages of adults with college degrees or higher increased by one standard deviation, enrollments of Chinese were likely to increase by 0.231% ( $p\leq 0.050$ ) on average across the 50 states, consistent with our expectations due to the similar reasons discussed before.

However, contrary to our assumption, Model 1 also showed that more percentages of Asian students in a state did not lead to more percentages of students enrolled in Chinese but less. The predictor had a comparatively weak but significant negative effect ( $\beta=-0.178$  in standard deviation units,  $p\leq 0.100$ ). This is inconsistent with the hypothesis that we made from the mimetic mechanism of institutional effect diffusion: a larger population of a certain minority group is likely to be associated with bigger corresponding foreign language programs. It might be true for some languages, such as Spanish, or some other small languages, but it is not the case for Chinese programs.

According to the ACTFL report (2017) data, in the school year of 2014 to 2015, two states, New York, and California, where Asians traditionally chose to settle down in a compact community, reported over 20,000 Chinese enrollments in K-12 public schools, and four states (Michigan, Texas, North Carolina, and Ohio) reported over 10,000 Chinese enrollments. The three traditional Melting Pots states (California, New York, and Texas) did have a large population of students who enrolled in Chinese, but regarding percentages, it was not the same



case. As shown in Table 10, Delaware had the largest percentage of Chinese enrollments in K-12 public schools during the school year of 2014 to 2015 (about 1.14%). Indeed, Delaware, as one of the pioneer states of Chinese immersion programs in the United States, started its first Chinese immersion program in 2012 to 2013 school year at Caesar Rodney school district. Since then, more Chinese immersion programs were founded and kept growing at multiple Delaware school districts. Another state with prosperous Chinese immersion programs, Utah, had 0.97% overall Chinese enrollments, ranking the second place. Six other states (Maryland, Massachusetts, Michigan, Minnesota, New York, and Colorado) had more than 0.70% Chinese enrollments. While New York state remained a high ranking of Chinese education with 0.82% K-12 public school students learning Chinese, California only had 0.31% and Texas only 0.23% students in K-12 public schools that enrolled in Chinese, both smaller than the national mean, 0.42%. The large number of Chinese enrollments in California and Texas were more likely due to their overall population advantage.

Table 10: Percent of Chinese Enrollments by State (2004-2005, 2007-2008, and 2014-2015)

<b>State</b>	<b>Percent of Chinese Enrollments in 2004-2005</b>	<b>Percent of Chinese Enrollments in 2007-2008</b>	<b>Percent of Chinese Enrollments in 2014-2015</b>
Alabama	0.014%	0.012%	0.316%
Alaska	0.000%	0.014%	0.278%
Arizona	0.000%	0.000%	0.332%
Arkansas	0.008%	0.000%	0.171%
California	0.125%	0.203%	0.311%
Colorado	0.008%	0.020%	0.707%
Connecticut	0.027%	0.187%	0.367%
Delaware	0.000%	1.698%	1.139%
Florida	0.002%	0.062%	0.236%
Georgia	0.009%	0.138%	0.405%
Hawaii	0.009%	0.086%	0.474%
Idaho	0.000%	0.000%	0.450%
Illinois	0.023%	0.081%	0.292%
Indiana	0.028%	0.118%	0.294%
Iowa	0.020%	0.020%	0.108%
Kansas	0.028%	0.031%	0.307%
Kentucky	0.002%	0.078%	0.223%

State	Percent of Chinese Enrollments in 2004-2005	Percent of Chinese Enrollments in 2007-2008	Percent of Chinese Enrollments in 2014-2015
Louisiana	0.000%	0.000%	0.094%
Maine	0.088%	0.219%	0.284%
Maryland	0.123%	0.378%	0.796%
Massachusetts	0.079%	0.332%	0.788%
Michigan	0.006%	0.074%	0.740%
Minnesota	0.092%	0.364%	0.729%
Mississippi	0.000%	0.000%	0.239%
Missouri	0.028%	0.044%	0.112%
Montana	0.057%	0.000%	0.618%
Nebraska	0.019%	0.066%	0.115%
Nevada	0.000%	0.009%	0.130%
New Hampshire	0.000%	0.000%	0.353%
New Jersey	0.011%	0.279%	0.629%
New Mexico	0.005%	0.000%	0.499%
New York	0.134%	0.265%	0.817%
North Carolina	0.020%	0.163%	0.694%
North Dakota	0.000%	0.000%	0.445%
Ohio	0.023%	0.118%	0.556%
Oklahoma	0.025%	0.173%	0.232%
Oregon	0.000%	0.065%	0.755%
Pennsylvania	0.045%	0.097%	0.177%
Rhode Island	0.000%	0.378%	0.022%
South Carolina	0.000%	0.000%	0.248%
South Dakota	0.025%	0.025%	0.467%
Tennessee	0.000%	0.005%	0.571%
Texas	0.018%	0.033%	0.231%
Utah	0.000%	0.222%	0.971%
Vermont	0.066%	0.218%	0.335%
Virginia	0.034%	0.048%	0.236%
Washington	0.038%	0.155%	0.641%
West Virginia	0.000%	0.074%	0.115%
Wisconsin	0.047%	0.056%	0.504%
Wyoming	0.000%	0.000%	0.523%
Total	0.042%	0.124%	0.420%

*Note.* Adopted and generated from “Foreign Language Enrollments in K-12 Public Schools: Are Students Prepared for a Global Society?” by American Council on the Teaching of Foreign Languages, 2010, and “The National K-12 Foreign Language Enrollment Survey Report,” by American Council on the Teaching of Foreign Languages, 2017.

There are several potential reasons for how this reversal occurred. In some of the states, high school graduation requirements on foreign languages have a citation or notes which give students alternative pathways to fulfill the requirements. For instance, in California, to graduate

from high school, one unit of performing arts or foreign language is required. Meanwhile, “A public school student who has completed foreign language courses in private schools may receive credit for such coursework provided it is ‘at least equivalent to’ work at the same grade level in the public schools (California Department of Education website).” Similarly, taking Delaware as an example, since the school year of 2014 to 2015, the state started to implement the new policy of two units in the same foreign language in high school graduation requirements. Besides taking formal high-school level foreign language courses, “Students may complete the two-unit requirement by demonstrating novice-high or higher proficiency level on a nationally recognized assessment of language proficiency in the skill areas of speaking, reading and writing, using the levels of proficiency identified by the American Council for the Teaching of Foreign Language (ACTFL), or as approved for use by the state Department of Education (Delaware Department of Education website).”

In other words, under this kind of citations or notes, no matter where a student acquired the required foreign language proficiency: learned at home, through online courses, from private tutoring, or took foreign language courses in a private middle school or a community-organized Sunday School, if only the student could pass the state-recognized assessments and demonstrate that he/she has reached the required proficiency level, he/she was considered as having fulfilled the high school graduation requirements on foreign languages. Therefore, Asian students who obtained the required Chinese proficiency level through out-of-school learning may “test out” and earn the proficiency-based credits so as to check the mark of foreign language requirements without enrolling in Chinese courses at the school they formally attend.

Another potential reason may be explained with the linguistic assimilation among Asian immigrants and their children. Empirical research shows that Asian Americans are quickly

acculturating, for instance, by the second generation, only 7% are fluently bilingual, and the vast majority (over 70%) prefers to speak English only most of the time (Portes & Hao, 1998). Asian immigrants tend to lose their mother-tongue proficiency rapidly. When it comes to languages, Asian Americans consider the acquisition of English proficiency extremely important for themselves and their later generations as they attempt to incorporate into the middle-class American mainstream (Zhou & Xiong, 2005). While language is more than a tool for success, and it also connotes symbolic and cultural meanings, it can bring an immigrant child closer to the American mainstream while also detaching him/her away from their heritage.

The assimilation of Asian Americans is successful, at least to some extent. The Pew Research Center report (2012) titled *The Rise of Asian Americans* stated that “Asian Americans are the highest-income, best-educated, and fastest growing racial group in the United States,” which reinforced the “model minority” stereotype of Asians. Because of the generally high socioeconomic attainments and high intermarriage rates of Asian Americans, it might appear to some people that Asian Americans are reaching parity with Whites and are assimilating to the mainstream American society. However, after lengthy research, Lee and Kye (2016) argue that Asian Americans are indeed assimilating but in ways that differ from the Europeans. In their assimilating process, racial and ethnic boundaries between Asians and Whites may be solidified rather than Dissolved. Unlike European descendants, Asian Americans are still perceived as not “fully American” (Danico & Ng, 2004; Xu & Lee, 2013). That being said, the overall and still ongoing assimilating climate may be discouraging for the young Asian students to learn Asian languages, in this case, Chinese.

Model 2 added effects of year dummies to the test. The R-squared values of Model 2 are Within=0.0066, Between=0.3999, and Overall=0.2149. Similar to Model 1, the effect of

percentages of adults with college degrees or higher was significant and positive, with a slightly weaker effect ( $\beta=0.231$  in Model 1, and  $\beta=0.228$  in Model 2;  $p\leq 0.050$  in both models). The effect of percentages of Asian students remained significant, and its negative effect became a little stronger ( $\beta=-0.178$ ,  $p\leq 0.100$  in Model 1;  $\beta=-0.181$ ,  $p\leq 0.100$  in model 2). The similar reasons as in Model 1 mostly likely led to these two significant effects. It was unexpected that either of the year dummies were insignificant considering the rapid growth of Chinese programs in the United States: Chinese enrollments increased by 195% from the school year of 2004-2005 to 2007-2008, and 237% from 2007-2008 to 2014-2015 (ACTFL reports). If the analysis was conducted with raw enrollment percentages, the changes across years should have been highly positive and significant. However, in this dissertation, all data have been converted to standardized z-scores. While the raw percentages of Chinese enrollments were still fairly small on average across the nation (less than 1% of the total student population), the differences between states were relatively small and not large enough to be significant. However, it is very necessary to recognize the rapid growth of Chinese education across the United State (except South Dakota by the time that the data were collected).

The full Model 3 shows effects of the 10 state characteristics on Chinese enrollments when both year dummies and regional effects are included in the test. The three R-squared values of this whole model are Within=0.0052, Between=0.4518, and Overall=0.2437. Both the effects of percentages of adults with college degrees or higher and percentages of Asian students became weak and insignificant as the predictor of region “shared” the power of effects. Changes across years (which is the national average value) were still insignificant. Regional effects, for the first time, did not make the cut to be significant, which makes perfect sense in that all 50 states, except South Dakota, had Chinese programs but mostly still fairly small. The Northeast

had comparatively more enrollments ( $\beta=0.408$ ) and the South had relatively less students enrolled in Chinese ( $\beta=-0.247$ ), but the disparities were not large enough to have a significant impact.

In summary, analysis results from the three models suggest that, in school years of 2004 to 2005, 2007 to 2008, and 2014 to 2015, parents' education and race were related to the gaps of Chinese student enrollments between different states in U.S. K-12 public schools. Parents with college degrees or higher did show a positive effect on their children's Chinese learning, however, a larger population of Chinese immigrations or their descendants did not always lead to a larger percentage of Chinese enrollments as one normally would expect. Changes across different years of the national average value were not significant based on standardized scores. None of the other state characteristics showed a significant effect on Chinese enrollments. The effects of region factors were also not large enough to be significant. For after all, the total percentages of Chinese enrollments were still fairly small.

### **Japanese and Russian**

Japan is home to bolstering economy and is a nation of innovators, designers, and cultural exporters. Especially in recent years, Japanese courses have attracted more and more fans of *manga*, *anime*, *J-Pop* (Japanese Pop music), and Japanese movies. Because of the dedicated and active relationship between the United States and Japan, along with the two countries' aligned trade and security interests, interest in the United States about Japan and Japanese has been steadily growing in recent decades. Although the Cold War days are long behind, Russian is still deemed as a critical language for the United States, especially that with the current political situation, federal agencies have identified Russian as a priority language of national need.

Table 11: Estimates of Effects of State Characteristics on Japanese and Russian Enrollments Using Regression with Random Effects

Predictors	Japanese and Russian		
	Model 1	Model 2	Model 3
Percentages of Asian students	0.644***	0.645***	0.521***
	(0.074)	(0.074)	(0.084)
Percentages of Hispanic students	-0.032	-0.031	-0.176
	(0.068)	(0.068)	(0.078)
Percentages of adults with college degree and higher	-0.139*	-0.137*	-0.055
	(0.078)	(0.078)	(0.084)
Percentages of single parents	-0.116	-0.114	-0.081
	(0.078)	(0.079)	(0.087)
Percentages of republican in state legislature	0.210***	0.210***	0.122
	(0.072)	(0.073)	(0.078)
State revenues per student (\$)	0.100	0.100	0.083
	(0.077)	(0.077)	(0.081)
High school graduation requirements on foreign languages	-0.155	-0.168	-0.110
	(0.164)	(0.169)	(0.165)
Honors/College prep diploma on foreign languages	-0.022	-0.025	0.028
	(0.146)	(0.148)	(0.151)
Percentages of trade in total state GDP	-0.084	-0.083	-0.042
	(0.070)	(0.071)	(0.070)
Percentages of rural and urban students	-0.099	-0.099	-0.090
	(0.070)	(0.071)	(0.072)
<b>Year dummies</b>			
2007		0.003	0.002
		(0.149)	(0.144)
2014		0.048	0.024
		(0.154)	(0.149)
<b>Regional effects</b>			
South			-0.535*
			(0.274)
West			0.132
			(0.271)
Northeast			-0.687**
			(0.280)
Midwest			0.640***
			(0.229)
<b>Constant</b>	0.052	0.040	0.447
	(0.086)	(0.118)	(0.207)

Note: Standard errors are in parentheses. Estimates are based on standardized scores.

\*\*\*  $p \leq 0.010$ , \*\*  $p \leq 0.050$ , \*  $p \leq 0.100$ .

This session discusses about the factors that shaped the current Japanese and Russian enrollment patterns. Table 11 shows the effects of each state characteristic on the diffusion of Japanese and Russian enrollments in U.S. K-12 public schools. The test results of Model 1 show that, three state characteristics had significant effects on Japanese and Russian enrollments. The R-squared values of this model are Within=0.0149, Between=0.8082, and Overall=0.4803. The effect of percentages of adults with college degrees or higher was significant as it was on Spanish, French, German, and Latin, as well as Chinese. However, its effect on Japanese and Russian turned negative ( $\beta=-0.139$  in standard deviation units,  $p\leq 0.100$ ) though comparatively weak. It suggests that one standard deviation increase in percentages of adults with college degrees or higher in a state would lead to a 0.139% ( $p\leq 0.100$ ) decrease in Japanese and Russian enrollments on average. This result is contrary to our expectations and a reverse of our former tests on Spanish, French, German, and Latin, and Chinese enrollments.

This is probably due to the status of Japanese and Russian programs. Japanese and Russian learning in the United States is not as popular as the other languages discussed before yet, and not as many people have recognized its potential benefits. The current Japanese and Russian programs in K-12 public schools are relatively small and not as mature as the other foreign language programs, especially Spanish, French, and German. Comparatively, Japanese and Russian programs are more likely to get allocated less school resources, and inevitably have less to spend on hiring high-quality teachers, providing students with high-quality programs, and developing mature and systematic curricula. Therefore, parents may tend to encourage their children to study the “bigger” foreign languages more instead of Japanese and Russian.



Percentages of Asian students is the next predictor with a significant effect on Japanese and Russian enrollments. Opposite to its effect on Chinese enrollments, percentages of Asian students showed a highly positive effect ( $\beta=0.644$ ,  $p\leq 0.010$ ) in this test. This suggests that Asian students are more likely to enroll in Japanese and Russian than students from the other ethnic groups. It is possibly because of the complicated grammar system and unique writing system of Japanese and Russian which make the acquisition of these two languages particularly challenging. Asian students (especially Japanese heritage students) have the big advantage of learning Japanese because of the similarity among East Asian languages. While this analysis combined Japanese and Russian together, and Russian enrollments are much smaller than Japanese enrollments, the diffusion pattern of Russian programs will be shown clearer with regional effects.

Percentages of Republicans in the state legislature, which is the proxy for political conservatism, is the third predictor with a significant effect in Model 1, and it showed a strong positive effect on Japanese and Russian enrollments ( $\beta=0.210$ ,  $p\leq 0.010$ ). It suggests that inconsistent with our expectations, in states with strongly conservative political values, more students were likely to study Japanese and Russian. With the new racial demographics, the population of the racial minorities has been increasing in the United States. To maintain their political benefits, the conservative Republicans may take actions to protect the benefits of the elderly who are their large voter population, such as investing more money to Social Security or medical care while taking money away from programs for the young generation, such as education. However, results in this analysis proved to be the opposite case for Japanese and Russian programs. Studies show that conservative values do emphasize the importance of rigorous education (Elazar, 1984), which might explain why the conservative Republicans

support Japanese and Russian education. Japanese and Russian programs help enrich state curricula and moreover, supporting Japanese and Russian learning has long-range political benefits.

Besides effects of the 10 state characteristics on Japanese and Russian enrollments, Model 2 included year dummies in the analysis. The three R-squared values of Model 2 are Within=0.0157, Between=0.8080, and Overall=0.4807. Very similar to Model 1, the effect of percentages of adults with college degrees or higher was also negative and significant ( $\beta=-0.137$ ,  $p\leq 0.100$ ). Percentages of Asian students, and percentages of Republicans in the state legislature also continued to show positive and significant effects,  $\beta=0.645$  ( $p\leq 0.010$ ) and  $\beta=0.210$  ( $p\leq 0.010$ ) respectively. The estimates also only changed slightly. The three significant effects were most likely results of the same reasons in model 1. Neither of the year dummies were significant, consistent with our expectations, since Japanese and Russian enrollments have always been fairly small. Despite of some small changes, they were still fairly minor and not significant.

Model 3 shows effects of the 10 state characteristics on Japanese and Russian enrollments when both year dummies and regional effects are included in the test. The three R-squared values of this whole model are Within=0.0200, Between=0.8840, and Overall=0.5319. The effects of percentages of adults with college degrees or higher, and percentages of Republicans in the state legislature became weaker and insignificant. At the same time, percentages of Asian students continued to show a high positive and significant effect ( $\beta=0.521$ ,  $p\leq 0.010$ ).

Model 3 also shows that regional effects had significant influence on Japanese and Russian enrollments. Very different from the languages discussed before, Japanese and Russian

have their unique diffusion patterns. The Midwest region showed a strong positive effect and had the largest percentage of students who enrolled in Japanese and Russian. Students who enrolled in Japanese and Russian in Midwest region were 0.640% more than students in Mountain region on average ( $\beta=0.640$ ,  $p\leq 0.010$ ). While the Northeast region, the region that leads foreign language education in general all over the nation, had the lowest percentage of students who studied Japanese and Russian ( $\beta=-0.687$ ,  $p\leq 0.050$ ) during the school years under study. It appears that despite of its leading status of Spanish, French, German, Latin, and Chinese learning, the Northeast region has not developed a strong Japanese and Russian learning culture yet. The effect of the South region was also significant: students who enrolled in Japanese and Russian in South were 0.535% less comparing to the Mountain region ( $\beta=-0.535$ ,  $p\leq 0.100$ ), which was likely due to the Southern states' larger percentages of African American and Hispanic students.

Comparatively, Russian enrollments were much smaller than Japanese enrollments. The ACTFL reports (2010 and 2017) data show that, during the school year of 2014 to 2015, the national average Japanese enrollments were 0.125% while Russian were only 0.028%. For this reason, this session focuses on Japanese enrollments more. In 2014 to 2015, California has the largest Japanese enrollments (12,054 students; possibly because of the large student population and Asian heritage students), followed by Utah (8,120 students) and Michigan (4,970 students). As for percentages, as shown in Table 12, Utah led the Japanese education across the country with 1.305% K-12 public school students learning the language. Wyoming, Idaho, Oregon, Washington, and Michigan also had comparatively more percentages of students enrolled in Japanese, ranging between 0.6% and 0.3%. The traditional Melting Pot states, such as California and New York, had less than 0.2% Japanese enrollments. Some states, such as Arkansas,

Oklahoma, Louisiana, Florida, Missouri, and Nebraska, had very few K-12 public school students learning Japanese, all less than 0.03%.

Table 12: Percent of Japanese Enrollments by State (2004-2005, 2007-2008, and 2014-2015)

<b>State</b>	<b>Percent of Japanese Enrollments in 2004-2005</b>	<b>Percent of Japanese Enrollments in 2007-2008</b>	<b>Percent of Japanese Enrollments in 2014-2015</b>
Alabama	0.002%	0.002%	0.079%
Alaska	0.688%	0.935%	0.094%
Arizona	0.055%	0.076%	0.119%
Arkansas	0.011%	0.010%	0.001%
California	0.213%	0.235%	0.177%
Colorado	0.117%	0.174%	0.190%
Connecticut	0.056%	0.045%	0.051%
Delaware	0.000%	0.116%	0.166%
Florida	0.045%	0.038%	0.022%
Georgia	0.067%	0.079%	0.054%
Hawaii	2.998%	4.246%	0.235%
Idaho	0.253%	0.204%	0.452%
Illinois	0.029%	0.078%	0.041%
Indiana	0.334%	0.314%	0.216%
Iowa	0.134%	0.090%	0.101%
Kansas	0.074%	0.043%	0.044%
Kentucky	0.039%	0.082%	0.037%
Louisiana	0.007%	0.008%	0.018%
Maine	0.002%	0.090%	0.068%
Maryland	0.144%	0.189%	0.095%
Massachusetts	0.028%	0.026%	0.036%
Michigan	0.112%	0.107%	0.291%
Minnesota	0.178%	0.169%	0.095%
Mississippi	0.003%	0.000%	0.043%
Missouri	0.078%	0.066%	0.025%
Montana	0.053%	0.000%	0.257%
Nebraska	0.050%	0.060%	0.030%
Nevada	0.154%	0.295%	0.086%
New Hampshire	0.000%	0.026%	0.072%
New Jersey	0.005%	0.132%	0.055%
New Mexico	0.081%	0.060%	0.150%
New York	0.043%	0.070%	0.137%
North Carolina	0.186%	0.123%	0.081%
North Dakota	0.000%	0.000%	0.134%
Ohio	0.075%	0.073%	0.046%
Oklahoma	0.003%	0.005%	0.013%
Oregon	0.639%	0.740%	0.352%
Pennsylvania	0.093%	0.089%	0.104%

State	Percent of Japanese Enrollments in 2004-2005	Percent of Japanese Enrollments in 2007-2008	Percent of Japanese Enrollments in 2014-2015
Rhode Island	0.003%	0.118%	0.047%
South Carolina	0.003%	0.000%	0.079%
South Dakota	0.249%	0.088%	0.151%
Tennessee	0.009%	0.006%	0.215%
Texas	0.045%	0.049%	0.055%
Utah	0.054%	0.196%	1.305%
Vermont	0.000%	0.103%	0.075%
Virginia	0.163%	0.341%	0.123%
Washington	0.755%	0.798%	0.310%
West Virginia	0.143%	0.121%	0.033%
Wisconsin	0.310%	0.285%	0.166%
Wyoming	0.050%	0.035%	0.657%
Total	0.129%	0.151%	0.125%

*Note.* Adopted and generated from “Foreign Language Enrollments in K-12 Public Schools: Are Students Prepared for a Global Society?” by American Council on the Teaching of Foreign Languages, 2010, and “The National K-12 Foreign Language Enrollment Survey Report,” by American Council on the Teaching of Foreign Languages, 2017.

In only 10 years’ period, Japanese enrollments in Utah have grown from only 0.054% to 1.305%, with an increase of 24 times. Behind the rapid growth, there are some good reasons. In 2008, the Utah Senate passed the International Initiatives (Senate Bill 41) which created funding for Utah K-12 schools to begin Dual Language Immersion programs in Chinese, French, and Spanish (Portuguese was added to the program for the 2012-2013 school year), and then-Governor Huntsman initiated the Governor’s Language Summit and the Governor’s World Language Council, both with a goal to create a K-12 language Roadmap for Utah. Ever since then, foreign language education in Utah has seen a huge increase and great success. Only six years later by 2014, Utah completed the challenge of implementing one hundred Dual Language Immersion programs with a goal of enrolling 30,000 Utah K-12 school students (Utah Dual Language Immersion webpage). Utah has become one of the leading states in foreign language education, especially in the Less Commonly Taught Languages such as Japanese and Chinese.

The successful story of Utah foreign language education once again proved the strong effects of policies and resources on foreign language programs.

In summary, analysis results from these three models indicate that, during school years of 2004 to 2005, 2007 to 2008, and 2014 to 2015, parents' education, race, state political conservatism, and regions were associated with disparities of Japanese and Russian enrollments in U.S. K-12 public schools. No significant changes were shown across different years. None of the other state characteristics showed significant effects on Japanese and Russian enrollments. The only factor that was consistently significant was percentages of Asian students, which had a strong positive effect consistently in all three models, while unexpectedly, parents' education showed a negative effect on Japanese and Russian enrollments, opposite to the other languages that were discussed before.

## Chapter 5: Discussion

The profile of foreign language education in U.S. K-12 public schools revealed by the two ACTFL surveys (2010 and 2017) shows that, the overall national foreign language enrollments in U.S. K-12 public schools increased slightly but remained relatively low and stable in the school years of 2004 to 2005 (18.00%), 2007 to 2008 (18.51%), and 2014 to 2015 (19.66%), as shown in Table 13. Even though the percentages of foreign language enrollments only grew by 1.66% during the 10 years of period, the net growth of students who studied foreign languages in U.S. K-12 public schools were almost 2 million.

Table 13: Total National Foreign Language Enrollments by Year

Year	Foreign Language Enrollment	Total Student Enrollment	Percentage of Students Enrolling in Foreign Languages
2004-2005	8,638,990	47,983,788	18.00%
2007-2008	8,907,201	48,112,069	18.51%
2014-2015	10,638,282	54,110,970	19.66%

*Note.* Adopted from “Foreign Language Enrollments in K-12 Public Schools: Are Students Prepared for a Global Society?” by American Council on the Teaching of Foreign Languages, 2010, and “The National K-12 Foreign Language Enrollment Survey Report,” by American Council on the Teaching of Foreign Languages, 2017.

This growth was partially because of the major efforts of a number of states to support K-12 foreign language education. While locally, decisions were being made to consolidate programs in certain specific foreign languages and/or eliminate certain ones. Thus, education in foreign languages in U.S. K-12 public schools continued to experience dynamic changes in terms of the percentages of enrollments and diffusion patterns of different languages between states as well as different regions.

### Key Findings of the Study

The data analysis suggests that, among the 10 state characteristics addressed in Chapter 4, parents’ education, state policies, race, and state political conservatism had the strongest effects

on foreign language enrollments in U.S. K-12 public schools during the school years of 2004 to 2005, 2007 to 2008, and 2014 to 2015. For enrollments of Spanish, French, German, and Latin, as well as Chinese, the effect of percentages of parents with college degrees or higher, as a proxy for parents' education, was strongly positive, but its effect was negative for Japanese and Russian enrollments. High school graduation requirements on foreign languages, as a proxy for state policies, had a persistently positive effect on Spanish enrollments, but showed no significant effect on the enrollments of the other languages under study. Among the two racial components selected to be tested, percentages of Hispanic students showed a strong and significantly negative effect on enrollments of French, German, and Latin, consistent with our expectations. However, the test results of the effect of percentages of Asian students were more complicated and unexpected: percentages of Asian students had a consistently positive effect on Japanese and Russian enrollments, and a negative effect on enrollments of French, German, and Latin. Most strikingly, its effect on Chinese enrollments was also negative, contrary to our expectations. State political conservatism, represented by percentages of Republicans in the state legislature, also showed an unexpected positive effect on Japanese and Russian enrollments. In addition, regions also mattered for foreign language learning. The Northeast and Midwest regions had significantly larger percentages of students learning Spanish. For French, German, and Latin enrollments, the Northeast region took the leading place again. The Midwest region had a positive effect on Japanese and Russian enrollments, while the Northeast and South regions had comparatively smaller percentages of students enrolling in Japanese and Russian programs.

*Parents' education: greater parental involvement in children's education*



The effect of parents' education, represented by the predictor of percentages of adults (ages between 30 to 50) with college degrees or higher, was strongly positive on enrollments of Spanish, French, German, and Latin, as well as Chinese, but was negative on Japanese and Russian enrollments in U.S. K-12 public schools. In line with the hypothesis based on human capital theory, social and cultural capital theory, and resource dependence theory, the results confirmed that more educated parents, who generally possess more human capital and social and cultural capital, and are in higher social class, tend to get more involved in their children's education in ways of providing resources, both financially and culturally, giving their children guidance on course selections and future academic and career planning, and having more power to and more likely to step up to influence school decisions, such as course provision, resource allocation, and so on.

Parents' education had the strongest positive effect among all the state characteristics on Spanish, French, German and Latin, and Chinese enrollments, especially on French, German, and Latin in spite of the decrease of these three languages' overall enrollments nationally. Parents with college degrees or higher are more likely to recognize and value the benefits of foreign language learning on their children's academic achievement and future career development, which leads them to encouraging and supporting their children to study these languages at school, no matter the most commonly learned and widely used Spanish, the rapidly growing Chinese, or the classic French, German, or Latin. On the other hand, thus far, Japanese and Russian programs are still comparatively small and less developed in U.S. K-12 public schools. Even well-educated parents might have not realized the big benefits of learning these two languages, or they preferred their children to enroll in foreign language programs that were more mature, and better-supported with all aspects of resources. Due to either of the reasons or

both, the predictor, parents with college degrees or higher, was negatively correlated to Japanese and Russian enrollments.

*State policies: the coercive power and the corresponding resource support*

The second significant predictor is state policies. Regarding foreign language education, the most representative state policy would be state high school graduation requirements on foreign languages. In general, it is positively correlated to foreign language enrollments—when a state has high school graduation requirements on foreign languages, there are more students learning foreign languages, in the United States, especially Spanish. There is no doubt that Spanish is the most widely offered and learned foreign language in U.S. K-12 schools. Spanish is also considered the easiest to learn for English native speakers, the most useful foreign language in the United States, and naturally, the foreign language with the best developed curricula, the most resources, and considered the most promising and rewarding foreign language to learn in the United States.

Moreover, high school graduation requirements provide basic coercive power and political and social forces so that schools have the obligation to offer foreign language courses to maintain their institutional legitimacy and provide students the opportunities to learn the language, and meanwhile, policies and political support also help guarantee resource support for the foreign language programs. By comparison, even less states have any foreign language requirements to earn an honors/college prep diploma. This policy affects much smaller student body and has much weaker coercive power as well as influence on resource allocation. Therefore, although honors/college prep diploma on foreign languages showed some positive effects on enrollments of certain foreign languages in U.S. K-12 public schools, its effects were

not strong enough to be significant.

When a state has high school graduation requirements on foreign languages, it is perfectly reasonable for the majority students to choose learning Spanish considering the popularity and widely recognized status of the language. For some students, it may be easier to earn the required credits if they select the comparatively easier-to-master Spanish rather than the other more challenging ones. From schools' point of view, in order to meet students' needs and fulfill the state requirements, it makes sense to allocate the most resources to Spanish programs and make developing and maintaining Spanish programs as their priority among all the foreign languages. Moreover, schools would encounter less difficulty hiring qualified Spanish teachers than teachers of other foreign languages, and over the years, the dedicated educators have established systematic and mature Spanish curricula of all proficiency levels, both of which, in turn, attract more interested students and schools to Spanish learning and education. With the special status Spanish language has in the United States and this positive cycle, the presence of the state policy on foreign languages shows strong and positive effects on Spanish programs in U.S. K-12 public school, but not the other less learned foreign languages yet.

Pufahl and Rhodes' (2011) *Foreign Language Instruction in U.S. Schools* report also provided evidence of the strong effect of policies on foreign language enrollments. The report stated that, nearly one third of public elementary and secondary schools with foreign language programs reported that language teaching had been negatively affected by No Child Left Behind (NCLB) education legislation. Respondents of the survey commented that NCLB's focus on mathematics and reading instruction had drawn resources away from foreign languages because foreign languages were not included in the law's accountability measures. This is consistent with the finding in this dissertation, and once again proved the contributing, interdependent, and

mutually reinforcing relationship among the three pillars of institutional theory: rules and norms, sanctioning power, and resources all function together to support the survival or success of a program. With any factor missing, the support weakens, and the program would face the threat of losing its status and eventually failure.

*Race: the combination of political, historical, and social and cultural influence*

Race is the next component that significantly influences the enrollments and diffusion patterns of foreign language programs in U.S. K-12 public school. Considering their representativeness, this dissertation selected the percentages of Asian and Hispanic students, in comparison to White students and the other races, to test their effects on foreign language enrollments, and the outcomes turned out to be quite interesting. Consistent with the hypothesis, the analysis demonstrated that increase in percentages of Hispanic students in a state would lead to decrease in enrollments of all the foreign languages in U.S. K-12 public schools under study, though its effect was strongly negative and significant for French, German, and Latin programs only. It was rational in that currently in U.S. K-12 public schools, Chinese, Japanese, and Russian programs were still fairly small, while Spanish learning has been the most popular and Spanish programs were so widely spread that, between-state enrollment differences of these four languages were not so big to be considered significant. The “special” status of French, German, and Latin languages may have led to certain groups of students favoring them (such as White students) while the others (such as Hispanic students, and in this case, as well as Asian students) not so interested.

The result that Hispanic students have been lagging behind in foreign language learning demonstrated in this study was in line with the already proven disadvantaged status that Hispanic

students had in education overall, which was the result of the combined action of the long-existing racial discriminations and segregations, lack of education resources and poorer educational conditions, less support from family and community (for instance, lower family income, less parental involvement and support, less-stable community), as well as some other obstacles. All these reasons could all be traced back to the human capital theory, the social and cultural theory, and the resource dependence theory that were discussed before. It once again confirmed that all these theories do not work separately but all closely connected and function together.

The tests showed a more complicated effect of percentages of Asian students in a state on different foreign language programs in U.S. K-12 public schools. The analysis results showed that in states where there are a higher percentage of Asian students, on average, enrollments of Japanese and Russian would also be higher, which is in line with the hypothesis. Considering how difficult to learn as a foreign language both Japanese and Russian could be, the similarities among Asian languages, and geographically, Russia is adjacent to Asia, it is logical that Asian students, especially Japanese heritage students, are more likely to choose to learn Japanese and Russian.

Contrary to the prediction, the tests showed that percentages of Asian students in a state was negatively correlated to enrollments of French, German, and Latin as well as Chinese language. The negative effect of percentages of Asian students in a state on French, German, and Latin enrollments is understandable. One possible explanation is that Asian students may not be very enthusiastic in learning “European languages.” The test results demonstrated that the increase in percentages of Asian students in a state would result in slight decrease of Spanish enrollments as well, though the negative effect was not strong enough to be significant. After all,

as the most popular and learned foreign language in the United States, Spanish has the most widely spread learners, especially that in many schools, Spanish is the only foreign language that are available. To some Asian students who would like to include foreign languages in their courses, Spanish may be their only choice. Moreover, Asian student population is still comparatively small. Asian students' lack of interest in European languages is likely to have smaller impact on Spanish enrollments, but to the fairly smaller French, German, and Latin enrollments, its effect would be larger by comparison and significant.

The analysis outcome is very much unexpected that a larger percentage of Asian students in a state did not lead to more percentages of Chinese enrollments but less. The negative effect of the predictor was significant but comparatively weak considering the still small overall Chinese enrollments across the nation. In accordance with the mimetic mechanism of institutional effect diffusion, where the population of a certain minority group is larger, there should be more students who learn that corresponding foreign language. Focusing on raw numbers of how many students enrolled in Chinese in U.S. K-12 public schools only, the assumption was proved correct. The ACTFL (2010 and 2017) data show that the traditional Melting Pot states where have the country's largest Asian population, such as California, New York, and Texas, indeed, have the largest Chinese programs and most students who learn Chinese. However, the analysis results turned to be opposite to the assumption when the percentages (instead of the raw number) of students who enrolled in formal Chinese courses at school was the focus. In other words, in states with higher percentages of Asian population, percentages of Chinese enrollments were likely to be smaller on average, contrary to the hypothesis. States with the largest percentages of Chinese enrollments, such as Delaware, Utah, Maryland, and Massachusetts, have relatively smaller percentages of Asian population.

This reversal can be explained partially by one state policy of high school graduation requirements on foreign language, which allows students to fulfill the foreign language requirement with alternative pathways. In some states, students can get exempted from taking foreign language courses at school if they can demonstrate the state required foreign language proficiency level or prove that they have received the required foreign language credits from out of school. Asian students who learned Chinese at home, through online courses or private tutoring, in private schools or community-based Sunday schools, may be qualified to “test out” or receive the foreign language credit waiver according to this state policy. As a result, these Asian students do not need to take any foreign language courses at the schools they formally attend to graduate from high school, which may contribute to the smaller percentages of Chinese enrollments in states where percentages of Asian population are larger. Taking one step further, the “waiver” of formal foreign language courses Asian students receive may be able to explain, at least to a certain degree, the smaller percentages of Asian students enrolled in Spanish, French, German, and Latin programs in U.S. K-12 public schools.

Another potential explanation of the reversal is the linguistic and cultural assimilation among Asian immigrants and their children. As discussed in Chapter 4, even though Asian Americans are widely recognized as the “model minority” with high income and good education in general, the racial group is still undergoing the assimilating effort, which may have negative impact on the Chinese language learning culture among the younger generation of Asian Americans. As the institutional theory states that organizations are social and cultural systems, schooling and education, in this study learning a foreign language or not, is also influenced and shaped by the large social and cultural environment.

*State political conservatism: protecting their political benefits*

The fourth significant predictor is percentages of Republicans in the state legislature, which is the proxy for state political conservatism. The predictor showed no significant effects on enrollments of most of the foreign languages under study except Japanese and Russian, so it is a comparatively weak factor among all the ones with significant effects. The analysis results demonstrated an unexpected outcome that in states with strongly conservative political values, more students were likely to study Japanese and Russian on average in U.S. K-12 public schools, inconsistent with the hypothesis.

With the new diversity explosion in the United States, the nation has seen the continuous population growth of the young minority generations. The benefit conflict between the increasing diverse child population and the large White older population is inevitable, with both sides fighting for the limited amount of public resources. It is common sense that in the United States, the political conservatives represent their largely older White voters. Under the new racial demographic structure, the conservative Republicans would work more industriously than ever to direct more resources to areas like Social Security and medical care that directly benefit the elderly while restricting financial investment to programs that benefit the young generations more, for instance, education. The reverse result may be explained by the special status of Japanese and Russian as critical foreign languages for U.S. political benefits and national safety. In addition, the Japanese and Russian learning culture is still fairly weak in U.S. K-12 public schools, and Japanese and Russian programs are the smallest among all the seven languages selected in this dissertation. In states where the political conservatism supports Japanese and Russian learning, there may also be some localized reasons.



*Regions: resource support, parental involvement, and learning from adjacent states*

Regions is the last predictor that shows significant effects on enrollments of the studied foreign languages in U.S. K-12 public schools. Taking the Mountain region as the base and comparison, this dissertation tested the effects of the other four regions, namely South, West, Northeast, and Midwest, on diffusion patterns of foreign language programs. Consistent with the predictions based on human capital theory, social and cultural capital theory, resource dependence theory, and policy network and innovation diffusion, regions did influence student enrollments of foreign language programs. Overall, test results demonstrated that the Northeast region led foreign language education in the nation, and the South region lagged behind and had the smallest percentages of young children learning foreign languages when the data used in this dissertation were collected. In the Center for Applied Linguistics report (Pufahl & Rhodes, 2011), it also found that schools in the Northeast region were more likely to offer languages than any of the other regions, which is in line with the findings in this dissertation.

More specifically, different foreign languages showed their unique diffusion patterns in different regions. Spanish as the foreign language with the most students, had the largest percentages of K-12 public school learners in the Northeast region, with the Midwest region the next most. Though the effects of the South and West regions on Spanish enrollments were not significant, the Mountain region had the smallest percentages of Spanish enrollment overall. French, German, and Latin also were most popular in the Northeast region and had more percentages of enrollments in K-12 public schools than all the other regions. Chinese language programs have been growing and widely diffused all over the country (except North Dakota back to the years when data were collected), but mostly were still fairly small. Therefore, the regional differences of Chinese enrollments in K-12 public schools were also small and not significant.

The even smaller Japanese and Russian programs, on the other hand, did show some regional disparities and very different diffusion patterns from the other foreign languages. The Midwest region had the largest percentages of K-12 public school students who enrolled in Japanese and Russian. The effects of both the South and Northeast regions were negative and significant on Japanese and Russian enrollments, and the Northeast region had the smallest percentages of enrollments on average.

Pufahl and Rhodes' (2011) report *Foreign Language Instruction in U.S. Schools* stated that rural schools overall, small middle and high schools (both of which typically possess less resources), and elementary and middle schools with a lower socioeconomic status were less likely to offer foreign languages. This finding proved that resources, or put it in a simple way, money, matters a lot to foreign language education (and to education in general), which was also the conclusion this study reached from the significant effect of parents' education on foreign language program in U.S. K-12 public schools. In foreign language education field, the Northeast region's leading status and the South region's lack of growth could trace back to their levels of economic development and ability to provide financial support to their schools. Affluent regions have the natural advantage to host more richer parents who possess more human capital, and social and cultural capital. These parents, usually with higher social class, not only are capable of providing more financial support and guidance for their children's education, but also feel more confident and qualified to advocate for their children's benefits and influence school decisions. The involvement of this "pressure group" has critical impact not only on their own children but also school resource allocation and decision making of school programs. Resources and parental involvement seem to be even more important components considering the facts that foreign language education is still not a core subject in U.S. K-12 schools, and that

K-12 schools' direct "customers" are young students whose parents mostly make decisions for them.

Illustrating the mimetic mechanism of institutional effect diffusion, policy networks and innovation diffusion could serve as another explanation of the regional effects on foreign language programs. Before foreign languages gain the status of one of the core subjects in U.S. K-12 schools and form more systematical and unified curricular standards nationally, in addition with the strong local control over public education in the United States, state policymakers and local schools can exercise broad discretion to make decisions on foreign language programs. For these decision-makers, a great resource for references would be their adjacent states' successful experience. As identical or similar policies diffuse in the region and more foreign language programs emerge and grow bigger, it becomes more convenient for programs in the region to share resources, exchange experience, and move forward together.

### **Limitations of the Study and Directions for Future Research**

As mentioned in the beginning of Chapter 4, this dissertation aims to finding out the factors that influence the diffusion patterns of foreign language programs in U.S. K-12 public schools, and how big effects these factors have. The current study focuses on the between-state differences only. The state-level characteristics are blind to within-state variation. The next research focus could be the influence power of district-level or regional-level components on diffusion of foreign language programs within a certain state.

The key datasets this dissertation used, foreign language enrollment data from ACTFL reports, were limited to formal education system (K-12) only, and did not include existing networks of heritage, community-based, after-school and weekend-and summer school

programs, which also provides significant amount of language and cultural education, especially for less commonly offered languages at K-12 schools such as Arabic, Chinese, Japanese, Korean, and Russian. Due to data limitations, this dissertation only focused on seven highly representative languages (Spanish, French, German, Latin, Chinese, Japanese, and Russian), but did not include some of the Less Commonly Taught Languages (LCTL) that were also offered year round at a vast range of K-12 schools, especially ASL (American Sign Language which gained even bigger popularity in recent years), and some of the Critical Languages, for instance, Arabic, Hindi/Urdu, Korean, Persian, Portuguese, and Turkish. Moreover, the future research can also study each foreign language separately instead of combining Japanese and Russian, or French, German, and Latin together. For after all, each language has its unique characteristics in spite of their similarities.

Besides including a wider range of foreign languages and more forms of foreign language schools, the future research can also study foreign language programs in U.S. K-12 private schools as well as college-level foreign language education. Because of the vast differences between public and private schools, and even bigger differences between K-12 education and higher education, for instance student pool, school financial sources, operational mode, legal obligations, and many more, the diffusion patterns of foreign language programs in these different kinds of schools would be very different and shaped by different components, too.

In this dissertation, foreign language enrollments of all grade levels from kindergarten to the 12<sup>th</sup> grade were added together, but it is obvious that much larger percentages of high school students learn foreign languages at school than K-8 students in the United States. Even at different grade levels, changes happen constantly regarding foreign language learning culture and status. The survey (Pufahl & Rhodes, 2011) Center for Applied Linguistics conducted in

2008 showed that, although foreign language instruction in the United States remained relatively steady at the high school level from 1997 to 2008, but it decreased substantially in elementary and middle schools. The data collection work can be challenging, but studies focusing on diffusion patterns of foreign language programs at different grade levels and over time can be informative.

Similarly, another extension to the current study can involve foreign language learners' language proficiency levels. For after all, the investment and achievement of a beginning student at the Novice level is enormously different from one who has reached the Advanced proficiency level and gained the competence of using the foreign language fluently and professionally. One great example is the rapidly growing immersion language programs in the United States in recent decades. Because of their unique course structure, enormous policy and financial support, highly required parental involvement, and fast growing of students' language proficiency levels, immersion programs have attracted many researchers' attention, and it would be very interesting and informative to study their diffusion patterns in U.S. K-12 public schools.

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