

Hispanic or Latino Student Success in Online Schools

Michael Corry

Volume 17, Number 3, April 2016

URI: <https://id.erudit.org/iderudit/1066234ar>
DOI: <https://doi.org/10.19173/irrodl.v17i3.2257>

[See table of contents](#)

Publisher(s)

Athabasca University Press (AU Press)

ISSN

1492-3831 (digital)

[Explore this journal](#)

Cite this article

Corry, M. (2016). Hispanic or Latino Student Success in Online Schools. *International Review of Research in Open and Distributed Learning*, 17(3), 251–262. <https://doi.org/10.19173/irrodl.v17i3.2257>

Article abstract

The purpose of this study is to examine graduation and dropout rates for Hispanic or Latino K–12 students enrolled in fully online and blended public school settings in Arizona. The independent variables of school type (charter vs. non-charter) and delivery method (fully online vs. blended) were examined using multivariate and univariate methods on the dependent variable's graduation and dropout rates for Hispanic or Latino students. The results of this research study found a statistically significant difference when using multivariate analysis to examine school type (charter vs. non-charter) and delivery method (fully online vs. blended) on graduation and dropout rates. This finding warranted further univariate examination which found a statistically significant difference when examining delivery method on dropout rates. A comparison of mean dropout rates shows that Hispanic or Latino students involved in K–12 online learning in Arizona are less likely to drop out of school if they are in a fully online learning environment versus a blended learning environment. Students, parents, teachers, administrators, instructional designers, and policy makers can all use this and related research to form a basis upon which sound decisions can be grounded. The end result will be increased success for Hispanic or Latino online K–12 students not only in Arizona schools, but in many other important areas of life.

Copyright (c) Michael Corry, 2016



This document is protected by copyright law. Use of the services of Érudit (including reproduction) is subject to its terms and conditions, which can be viewed online.

<https://apropos.erudit.org/en/users/policy-on-use/>

érudit

This article is disseminated and preserved by Érudit.

Érudit is a non-profit inter-university consortium of the Université de Montréal, Université Laval, and the Université du Québec à Montréal. Its mission is to promote and disseminate research.

<https://www.erudit.org/en/>

April – 2016

Hispanic or Latino Student Success in Online Schools

Michael Corry
George Washington University

Abstract

The purpose of this study is to examine graduation and dropout rates for Hispanic or Latino K–12 students enrolled in fully online and blended public school settings in Arizona. The independent variables of school type (charter vs. non-charter) and delivery method (fully online vs. blended) were examined using multivariate and univariate methods on the dependent variable's graduation and dropout rates for Hispanic or Latino students. The results of this research study found a statistically significant difference when using multivariate analysis to examine school type (charter vs. non-charter) and delivery method (fully online vs. blended) on graduation and dropout rates.

This finding warranted further univariate examination which found a statistically significant difference when examining delivery method on dropout rates. A comparison of mean dropout rates shows that Hispanic or Latino students involved in K–12 online learning in Arizona are less likely to drop out of school if they are in a fully online learning environment versus a blended learning environment. Students, parents, teachers, administrators, instructional designers, and policy makers can all use this and related research to form a basis upon which sound decisions can be grounded. The end result will be increased success for Hispanic or Latino online K–12 students not only in Arizona schools, but in many other important areas of life.

Keywords: online, Hispanic, Latino, graduation, dropout, fully online, blended, charter, non-charter, Arizona, public school

Introduction

As online learning continues to spread throughout K–12 learning environments, there are many areas related to its use that need further research in order to assist students, parents, practitioners, researchers, and policy makers. This research can increase understanding of online learning in a manner that will help students' success (Bakia, Shear, Toyama, & Lassetter, 2012; Barbour & Reeves, 2009; Cavanaugh, Barbour, & Clark, 2009). Some of the variables that need to be considered during these research studies include the impact of the method of delivery and type of school on important success measures such as graduation and dropout rates. These research activities are even more important when considering underrepresented minority groups of K–12 students where wide achievement gaps exist between them and their counterparts (Corry, Dardick, Ianacone, & Stella, 2014; National Center for Education Statistics, 2011). One of the minority groups with the largest gaps in achievement is the Hispanic or Latino student population (National Center for Education Statistics, 2011). The purpose of this study is to examine graduation and dropout rates for Hispanic or Latino K–12 students enrolled in fully online and blended school settings. These schools are further examined by either public charter or public non-charter types of school. The results of this research study will identify the method of delivery and type of school that result in improved Hispanic and Latino student success.

Literature Review

During 2009–10 there were an estimated 1,816,400 enrollments in K–12 public school distance education courses in the United States (U.S. Department of Education, 2011). This is a dramatic increase from the total in 2002–03 which was estimated to be 317,070 and the total in 2004–05 which was estimated to be 506,950 (U.S. Department of Education, 2008). Most experts in the field believe those numbers are continuing to grow. Some authors have predicted that by 2019 approximately 50% of all high school courses will be delivered online (Christensen, Horn, & Johnson, 2008).

A large meta-analysis study of online learning published by the U.S. Department of Education (2010) identified several interesting findings. One of those findings suggested students perform somewhat better in online learning conditions than traditional face-to-face instruction. In addition to face-to-face instruction, the study identified two types of online learning delivery: fully online and blended. The study explains that blended learning includes elements of both online and face-to-face instruction. Whereas, fully-online does not include the face-to-face elements.

In addition to face-to-face, fully online, and blended options available to K–12 students and their families, there are several different types of schools that can be attended by students. Two common options that they can choose between are traditional public and charter schools. A public charter school is typically governed by group who has a contract or charter with the state or district where it resides. Between 1999–2000 and 2011–2012, the number of students in public charter schools increased from .3 million to 2.1 million students. As of 2011–2012, 42 states and the District of Columbia had passed legislation allowing charter schools to operate (U.S. Department of Education, 2014). Charter school options include face-to-face, fully online and blended options.

Student success in face-to-face, blended or fully online public charter and non-charter schools can be measured in many different ways. Two ways, which will be examined in this article, are graduation and dropout rates. Research from 2012 indicate that high school graduation rates have increased some in recent years, but the increases are unevenly distributed and gaps still exist (Balfanz, Bridgeland, Bruce, & Fox, 2012). National graduation rates from 2012 were the following: Hispanic or Latino students, 73%; White students, 86%, Black students, 69%; Asian or Pacific Islander students, 88%; and American Indian or Alaskan Native, 67% (Stetser & Stillwell, 2014).

Recent patterns of high school dropout rates mimic those of graduation rates. Nationally, dropout rates have been declining. However, gaps still exist between groups. As of 2012, the national high school dropout rates were: Hispanic or Latinos students, 13%; White students, 4%; and Black students, 8% (National Center for Education Statistics, 2014).

Failing to graduate or dropping out of high school can have extremely detrimental effects on the lives of these young students. According to research, students who drop out of school earn less, pay half as much in taxes, draw greater government subsidies (food stamps, etc.), are more likely to go to be incarcerated, are in poorer health, and have lower life expectancy than high school graduates (Dynarski, Clarke, Cobb, Finn, Rumberger, & Smink, 2008).

According to the U.S. Census Bureau (2012), the Hispanic or Latino race or ethnic group was one of the fastest growing in the United States. Their population grew by 2.2% to just over 53 million people in 2012. Hispanic or Latinos are the second largest race or ethnic group in the United States and one of the youngest groups. Much of their growth is due to a high birth rate as compared to other race or ethnic groups. The focus of this article is on the improvement of Hispanic or Latino student success in online K–12 education through improvements in graduation and dropout rates.

Methods

Within the United States, it has been reported that Arizona is one of the states with the largest number of student enrollments in K–12 online education courses. In addition, Arizona offers a wide variety of online school options to all students in the State (Watson, Pape, Murin, Gemin & Vashaw, 2014). In 2011, the Hispanic or Latino population in Arizona was approximately 1.9 million people and accounted for over 30 percent of the entire state population (Brown & Lopez, 2011). For these reasons, this study used data from Arizona to analyze graduation and dropout rates of Hispanic or Latino students enrolled full-time in online learning settings.

The following multivariate primary research question was addressed in this study:

1. Does school type (charter vs. non-charter) and delivery method (fully online vs. blended) predict graduation and dropout rates of Hispanic or Latino students in Arizona K–12 online public schools?

Additionally, the following univariate, secondary research questions were explored in this study:

1a. Does school type (charter vs. non-charter) impact graduation or dropout rates of Hispanic or Latino students in Arizona K–12 online public schools?

1b. Does delivery method (blended vs. fully online) impact graduation or dropout rates of Hispanic or Latino students in Arizona K–12 online public schools?

The first step in this analysis was to identify the K–12 schools in Arizona that offer full-time online learning options to their students. This was accomplished by compiling data from three main sources (a) a list obtained from the Arizona Department of Education which included the K–12 schools in the state who participate in the Arizona Online Instruction (AOI) initiative; (b) a list generated from an online search using search terms such as Arizona, online, virtual, global, and so on; and (c) a list generated by searching a dataset of the names of all K–12 schools in Arizona and looking for key terms such as online, virtual, global, and so on. These initial efforts resulted in a broad list of 62 schools that met the criteria described above.

The list of 62 schools was then further analyzed by visiting the Web sites for each of the schools to determine the method of delivery they used. They were coded as either *blended* or *fully online*. Also, during visits to the school Web sites, it was noted if the school offered face-to-face courses in addition to online options. It became apparent that some of the schools offered online or blended and fully face-to-face instruction. For purposes of this study, those schools who also offered fully face-to-face instruction were eliminated from the list of schools. This reduced the list of potential schools included in this study to 50.

At this stage of the study, two datasets were obtained from the Arizona Department of Education. The first dataset included the 2013 graduation rates for every public school in the state. The second dataset included the 2013 dropout rates for every public school in the state. The list of 50 schools was then compared to the two datasets to determine if graduation or dropout data were available for each school. Of the 50 schools on the list, 47 of them had some data for either graduation or dropout rates.

This list of 47 schools became the list to be used for further quantitative analysis in SPSS. These 47 schools offered either full-time blended or fully online instruction to their students. Of the 47 schools on the list, 19 schools had clean data for both graduation and dropout rates for Hispanic or Latino students. Nineteen schools had clean data for graduation rates. Forty-one schools had clean data for dropout rates. Forty-six of the schools had data for type of school (charter or non-charter) provided in the dropout rate dataset.

To better understand the data found in the graduation and dropout datasets the following explanations of *graduation* and *dropout* from the Arizona Department of Education (2014, 2015) Web sites are important to include.

A 4-year adjusted cohort graduation rate (ACGR) is defined as the number of students who graduate in 4 years with a regular high school diploma divided by the number of students who form the adjusted cohort for that graduating class. The term adjusted cohort means the students who enter grade 9 plus any students who transfer into the cohort in grades 9–12 minus any students who are removed from the

cohort because they transferred out, moved out of the country, or were deceased. Membership in a cohort class is established at the time of the student’s first enrollment in a high school grade in Arizona. Students are maintained in the cohort for their last high school of record unless they have transferred to another school granting a high school diploma, have left the public school system to be home schooled, or are deceased.

Dropout rates are reported for grades seven through twelve, and are based on a calendar year that runs from the first day of summer recess through the last day of school. A school’s total enrollment is used as the population figure against which dropouts are subsequently counted. For purposes of this study, dropouts are defined as students who are enrolled in school at any time during the school year, but are not enrolled at the end of the school year and did not transfer, graduate, or die.

Results

Using the data for Hispanic or Latino student populations from the 2013 graduation and dropout datasets provided by the Arizona Department of Education, a multivariate analysis of variance (MANOVA) was performed in SPSS on the 19 schools. Only 19 schools had responses for both dropout and graduation rate. The MANOVA was conducted to examine the relationship of the independent variable’s school type (charter vs. non-charter) and delivery method (fully online vs. blended) on the dependent variable’s graduation and dropout rates for Hispanic or Latino students. The multivariate effect was significant for both school type, Wilks’ $\lambda = .44$, $F(1, 16) = 9.398$; $p = .002$; partial $\eta^2 = 0.556$; observed power = .947 and delivery method, Wilks’ $\lambda = .506$, $F(1, 16) = 7.311$; $p = .006$; partial $\eta^2 = .494$; observed power = .88.

Univariate testing was conducted individually using the maximum number of schools reporting values for each outcome independently. Forty-one schools reported dropout rates. This analysis resulted in significance findings for delivery method, $F(1,38) = 5.06$; $p=0.03$; partial $\eta^2 = .118$; observed power = .592, but not for school type, $F(1,38) = 3.92$; $p = 0.055$; partial $\eta^2 = 0.093$; observed power .488, for the dependent variable dropout rate. Only 19 schools reported graduation rates with no univariate effects found to be significant. Interaction effects could not be determined as the model was not fully crossed. Group means and standard deviations are reported in Table 1.

Table 1

Sample Size, Mean Percent and Standard Deviation of Dropout and Graduation Rates for Hispanic or Latino Students

O	ST & DM	N	M	SD
Dropout Rate	Non-Charter School	20	23.19	16.51
	Charter School	21	19.14	14.43
	Blended Delivery	10	26.73	15.21
	Fully Online Delivery	31	19.31	15.29

**Hispanic or Latino Student Success in Online Schools
Corry**

Graduation Rate	Non-Charter School	6	32.45	22.78
	Charter School	13	22.10	17.20
	Blended Delivery	6	16.51	7.26
	Fully Online Delivery	13	29.50	21.66

Note. O=Outcome; ST & DM=School Type and Delivery Method; N =Number; M=Mean Percent; SD=Standard Deviation

Discussion

The purpose of this study was to examine graduation and dropout rates for Hispanic or Latino K–12 students enrolled in fully online and blended school settings in Arizona. These schools are further examined by either public charter or public non-charter types of school. The results of this research study identified the method of delivery and type of school that result in improved Hispanic and Latino student success. The first research question in this study was:

1. Does school type (charter vs. non-charter) and delivery method (fully online vs blended) predict graduation and dropout rates of Hispanic or Latino students in Arizona K–12 online public schools?

Based on the multivariate analysis performed in this study, a statistically significant difference was found in response to this research question. This indicates that school type and delivery method both have an effect on the combined two dimensional space of graduation and dropout rates and are meaningful. Because this is a broad finding, it led to more detailed research questions which were examined.

The second set of more detailed research questions asked were:

- 1a. Does school type (charter vs. non-charter) impact graduation or dropout rates of Hispanic or Latino students in Arizona K–12 online public schools?
- 1b. Does delivery method (blended vs. fully online) impact graduation or dropout rates of Hispanic or Latino students in Arizona K–12 online public schools?

The univariate testing along with the two sub-questions (1a-b) guided us to a more detailed understanding of the impacts that school type and delivery method have on graduation and dropout rates. Because there was no significant difference found regarding school type in the univariate analysis, the null hypothesis for research question 1a cannot be disproved. When comparing means for school type and graduation or dropout rates, it appeared that school type (research question 1a) did not impact graduation or dropout rates. Therefore, within the population of students in this study, it appeared that both charter public schools and non-charter public schools do equally well when measuring graduation and dropout rates of Hispanic or Latino online students in Arizona K–12 schools.

From a student or parent’s perspective, this would indicate that the decision on whether to enroll in a charter or non-charter online school might depend on other factors such as school calendar and schedule,

location and transportation (for blended delivery), student–teacher ratio, parent support, school support personnel, and so on. Based on the results of this study, future research on the impacts of these other factors on graduation and dropout rates of online K–12 students in public charter and non-charter public schools would be beneficial to students, parents, teachers, administrators, instructional designers, and policy makers.

Also, because there was no significant difference found concerning graduation rates in regard to delivery method, the null hypothesis for the graduation rate part of research question 1b cannot be disproved. When comparing means for delivery method and graduation rates, it does not appear that delivery method impacts graduation rates. Therefore, for Hispanic or Latino K–12 online students in Arizona, it appears that fully online and blended delivery methods do equally well when it comes to graduation rates. Again, when considering graduation, a student or parent represented by the group in this study might consider other factors when determining whether to enroll in a fully online or blended school.

Some of those factors might include school schedule and calendar, student–teacher ratio, location and transportation (for blended), student’s ability to work independently, student’s need for physical cues from the teacher, parental support, and so on. Again, future research on the impacts of these other factors on graduation rates would be beneficial to all stakeholders.

Because there is a statistically significant difference when examining dropout rates by delivery method, the null hypothesis for the dropout rate part of research question 1b can be disproved and this finding warrants further discussion. As can be seen in Table 1, the mean dropout rate for students in a fully online learning environment is 19.31%. In comparison, the mean dropout rate for students in a blended learning environment is 26.73%. This comparison shows that Hispanic or Latino students involved in K–12 online learning in Arizona are less likely to drop out of school if they are in a fully online environment versus a blended environment.

This is an important finding for families and students to consider when selecting the delivery method used in an online school. This is of particular importance to those students who might be at greater risk of dropping out of school. As previously discussed, dropping out of high school can have extremely detrimental effects on the lives of these students in areas such as health, future earnings, government support, life expectancy, and incarceration (Dynarski et al., 2008).

For teachers, administrators, and instructional designers, developing the fully online method is an important use of resources. In combination with researchers and policy makers, additional important variables need to be explored. Some of these variables include determining the best way to design fully online classes, how synchronous and asynchronous delivery impacts learning, how we train teachers to be effective in a fully online learning environment, and so on. As these variables are examined and research becomes available, course design and delivery should be modified to meet the needs of the students and to promote student success.

As a society in general, and as researchers and practitioners specifically, there are great benefits by lowering dropout rates. This is even more important with a relatively young, growing minority population of students such as the Hispanic or Latino population. Research, such as this study, can provide the basis

upon which future research and policy decisions can be grounded. Precious funding resources used to assist Hispanic or Latino students can be steered towards the educational environment that promotes the best chance for student success. Policy makers should consider this, and other similar research, to guide these types of funding decisions.

Finally, while the results of this study can only be used when discussing Hispanic or Latino K–12 online students in Arizona, there are several studies of online learning delivery types that have suggested that students generally perform better in blended learning environments than in fully online environments. Two of these recent, meta-analysis studies demonstrate that blended delivery has added benefits for students such as increases in standardized test scores and grades (Means, Toyama, Murphy, and Baki, 2013; U.S. Department of Education, 2010). How can the results of the current study, which supports fully online delivery, be reconciled with the results of these other studies, which generally support a blended delivery model? When pondering this question, at least two important factors need to be discussed. First, there is very little research examining graduation and dropout rates for online students in K–12 learning environments. Those studies which support the blended delivery model have not thoroughly examined graduation and dropout rates. Second, we need to consider that while blended delivery might be better suited for grades and standardized test scores, fully online delivery might be better suited for students who are at risk of dropping out of school. Those students who are at risk of dropping out of school might not have the means, motivation, or support to attend the face-to-face portion of the blended delivery class. This would lead to a higher dropout rate for those students taking classes delivered via the blended model. Also, there is growing evidence that many students enroll in online classes due to bullying (Beck, Egalite, & Maranto, 2014; Sivin-Kachala & Bialto, 2009). If bullying is greater in the face-to-face classroom, this would lead more at risk students to find success and lower dropout rates in the fully online delivery method. These students might intentionally try to avoid the face-to-face component of the blended delivery method. Finally, future research needs to be conducted to examine what types of students are more likely to enroll in online vs blended learning environments. This type of research might find that students who are more likely to drop out are also more likely to enroll in fully online versus blended delivery methods. The answers to these types of future research questions would provide additional insight into the interpretation of the results of the current study. Clearly, future research into this interesting and important area is warranted and needed.

Limitations and Future Research

Due to size and the nature of ex post facto research design, this research study has several limitations which should be noted. First, the study was limited to Hispanic or Latino students in full-time online public schools in Arizona. Second, for schools in the study with graduation rate data, all schools that employed the blended delivery method were charter schools. This means the data were not fully crossed and limits the findings for graduation rates. Third, the sample size was relatively small and may impact the power of the findings. These limitations weaken the inferential statements that can be drawn from the data. Arguments surrounding differences in the study fully recognize alternative explanations are both possible and in some cases likely.

Given these limitations and the findings of the study, there are many future research studies that can be designed. With any of these future studies, a larger sample size of schools would be recommended. A

larger sample size would improve power and might provide crossed data which would support the findings in both graduation and dropout variables. Future research studies that would be beneficial would serve to validate the findings of this study and to expand the research to other states, regions, and student populations including other minority and under-represented groups.

Additional future research studies might also get more detailed data at the student level. Moving from the school level to the student level would provide a new look at graduation and dropout rates. It would also provide the opportunity to examine students across schools and examine other variables.

Conclusion

The purpose of this study was to examine graduation and dropout rates for Hispanic or Latino K–12 students enrolled in fully online and blended public school settings in Arizona. These schools were further examined by either public charter or public non-charter types of school. The independent variables of school type (charter vs. non-charter) and delivery method (fully online vs. blended) were examined using multivariate and univariate methods on the dependent variable's graduation and dropout rates for Hispanic or Latino students. The results of this research study found a statistically significant difference when using multivariate analysis to examine school type (charter vs. non-charter) and delivery method (fully online vs. blended) on graduation and dropout rates.

This finding warranted further univariate examination which found no significant differences for school type on graduation or dropout rates. It also found no significant difference for delivery method on graduation. However, a statistically significant difference was found when examining delivery method on dropout rates. A comparison of mean dropout rates shows that Hispanic or Latino students involved in K–12 online learning in Arizona are less likely to drop out of school if they are in a fully online learning environment versus a blended learning environment. Students, parents, teachers, administrators, instructional designers, and policy makers can all use this and other related research to form a basis upon which sound decisions can be grounded. The end result will be increased success for Hispanic or Latino online K–12 students not only in Arizona schools, but in many other important areas of life.

References

- Arizona Department of Education (2014). *Graduation rate technical manual*. Retrieved from http://www.azed.gov/research-evaluation/files/2014/07/graduation-rate_ym.pdf
- Arizona Department of Education (2015). *Dropout rate study report*. Retrieved from <http://www.azed.gov/research-evaluation/dropout-rate-study-report/>
- Bakia, M., Shear, L., Toyama, Y., & Lassetter, A. (2012). *Understanding the implications of online learning for educational productivity*. Washington, DC: U.S. Department of Education, Office of Educational Technology. Retrieved from <http://tech.ed.gov/files/2013/10/implications-online-learning.pdf>
- Balfanz, R., Bridgeland, J. M., Bruce, M., & Fox, J. H. (2012). *Building a grad nation: Progress and challenge in ending the high school dropout epidemic: Annual update 2012*. Retrieved from <http://live-d7-americaspromise.pantheonsite.io/sites/default/files/BuildingAGradNation2012.pdf>
- Barbour, M. K., & Reeves, T. C. (2009). The reality of virtual schools: A review of the literature. *Computers and Education*, 52(2), 402–416.
- Beck, D., Egalite, A., & Maranto, R. (2014). Why they choose and how it goes: Comparing special education and general education cyber student perceptions. *Computers and Education*, 76, 70–79.
- Brown, A., & Lopez, M. (2011). *Ranking Latino populations in the States*. Retrieved from <http://www.pewhispanic.org/2013/08/29/ii-ranking-latino-populations-in-the-states/>
- Cavanaugh, C., Barbour, M. K., & Clark, T. (2009). Research and practice in K–12 online learning: A review of open access literature. *The International Review of Research in Open and Distributed Learning*, 10(1), 1–22. Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/607/1182>
- Christensen, C. M., Horn, M. B., & Johnson, C. W. (2008). *Disrupting class: How disruptive innovation will change the way the world learns*. New York, NY: McGraw-Hill.
- Corry, M.D., Dardick, W., Ianacone, R., & Stella, J. (2014). Understanding Online K-12 Students through a Demographic Study. *International Journal of Instructional Technology and Distance Learning*, 11(12).
- Dynarski, M., Clarke, L., Cobb, B., Finn, J., Rumberger, R., & Smink, J. (2008). *Dropout prevention* (NCEE publication number 2008-4025). Retrieved from https://ies.ed.gov/ncee/wwc/pdf/practice_guides/dp_pg_090308.pdf

- National Center for Education Statistics (2011). *Achievement gaps: How Hispanic and White students perform in mathematics and reading on the National Assessment of Educational Progress*. Retrieved from <http://nces.ed.gov/nationsreportcard/pdf/studies/2011459.pdf>
- National Center for Education Statistics (2014). *Fast facts: Dropout rates*. Retrieved from <http://nces.ed.gov/fastfacts/display.asp?id=16>
- Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. *Teachers College Record*, 115, 1–47.
- Sivin-Kachala, J., & Bialto, E. (2009). *Evaluation of the social skills of full-time, online public school students*. New York, NY: Interactive Educational Systems Design.
- Stetser, M. C., & Stillwell, R. (2014). *Public high school four-year on-time graduation rates and event dropout rates: School years 2010–11 and 2011–12* (NCES publication no. 2014-391). Retrieved from <http://nces.ed.gov/pubs2014/2014391.pdf>
- U.S. Census Bureau (2012). *Asians fastest-growing race or ethnic group in 2012, census bureau reports* [press release]. Retrieved from <http://www.census.gov/newsroom/press-releases/2013/cb13-112.html>
- U.S. Department of Education (2008). *Technology-based distance education courses for public elementary and secondary school students: 2002–03 and 2004–05* (NCES publication no. 2008-008). Retrieved from <http://nces.ed.gov/pubs2008/2008008.pdf>
- U.S. Department of Education (2010). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies*. Retrieved from <https://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf>
- U.S. Department of Education (2011). *Distance education courses for public elementary and secondary school students: 2009–10* (NCES publication no. 2012008). Retrieved from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012008>
- U.S. Department of Education (2014). *The condition of education 2014*. Retrieved from http://nces.ed.gov/programs/coe/indicator_cgb.asp
- Watson, J., Pape, L., Murin, A., Gemin, B., & Vashaw, L. (2014). *Keeping pace with K–12 digital learning*. Retrieved from http://www.kpk12.com/wp-content/uploads/EEG_KP2014-fnl-lr.pdf

