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Whiteness and Economic Advantage in Digital Schooling: Diversity Patterns and Equity Considerations for K-12 Online Charter Schools

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Abstract: Scholars and policymakers have yet to hold a robust conversation about diversity in K-12 online schools. This study builds on research that suggests online charter schools enroll higher percentages of White and economically advantaged students compared to national K-12 school enrollment averages. While these findings remain consistent, the study presented here employs techniques used in school segregation and diversity research to develop a more nuanced understanding of online charter school enrollment patterns. While more White and wealthy students attend online charter schools compared to other types of schools nationally, there are differences across states. Understanding the nature of these differences helps consider possibilities for moving online charter school enrollments toward increased diversity. While diversity in traditional schools has benefits, this article concludes with cautions about how to achieve equity through diversity in online spaces and if these goals are attainable. If online charter schools achieve racial and economic diversity, their leaders need to apply critical lenses in developing online programming to ensure diverse enrollments lead to equity.

Keywords: K-12 online learning; diversity; segregation; charter schools

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Whiteness y ventaja económica en la educación digital: Estándares de diversidad y consideraciones de equidad para las escuelas primarias y secundarias en línea

Resumen: En los Estados Unidos, académicos y formuladores de políticas, conversaciones sólidas sobre la diversificación de escuadrones en línea para el aprendizaje fundamental y medio. Este estudio se basa en una investigación que sugiere que las escuelas charter en línea registran porcentajes más altos de estudiantes blancos y económicamente favorecidos en comparación con los promedios nacionales de matrícula escolar K-12. Si bien estos resultados permanecen consistentes, el estudio presentado aquí emplea técnicas utilizadas en la segregación escolar y la investigación de diversidad para desarrollar una comprensión más sutil de los patrones de inscripción en línea de las escuelas charter. Si bien los estudiantes blancos más ricos asisten a escuelas charter en línea en comparación con otros tipos de escuelas en todo el país, existen diferencias entre los estados. Comprender la naturaleza de estas diferencias ayuda a abordar las posibilidades de determinar cómo inscribirse en las escuelas charter para aumentar la diversidad. Si bien la diversidad en las escuelas convencionales tiene beneficios, este artículo concluye con precauciones sobre cómo lograr la equidad a través de la diversidad en los espacios en línea y ver estos objetivos alcanzables. Mientras los estatutos de las escuelas en línea se puedan diversificar en diversidad racial y económica, los líderes deben aplicar lentes críticos al desarrollo de la programación en línea para garantizar matrices equitativas.

Palabras-clave: enseñanza en línea; diversidad; segregación escuelas *charter*

Whiteness e vantagem econômica na educação digital: padrões de diversidade e considerações de equidade para escolas on-line de ensino fundamental e médio

Resumo: Nos Estados Unidos, acadêmicos e formuladores de políticas não tiveram conversas sólidas sobre diversidade nas escolas on-line do ensino fundamental e médio. Este estudo baseia-se em pesquisas que sugerem que escolas charter on-line registram porcentagens maiores de alunos brancos e economicamente favorecidos em comparação com as médias nacionais de matrículas escolares K-12. Embora esses resultados permaneçam consistentes, o estudo apresentado aqui emprega técnicas usadas na pesquisa de segregação e diversidade na escola para desenvolver uma compreensão mais sutil dos padrões de matrícula escolar charter on-line. Enquanto mais estudantes brancos e ricos frequentam escolas charter on-line em comparação com outros tipos de escolas em todo o país, há diferenças entre os estados. Compreender a natureza dessas diferenças ajuda a considerar as possibilidades de transferir as matrículas em escolas charter on-line para aumentar a diversidade. Embora a diversidade nas escolas tradicionais tenha benefícios, este artigo conclui com precauções sobre como alcançar a equidade por meio da diversidade em espaços on-line e se essas metas são atingíveis. Se as escolas charter on-line alcançam diversidade racial e econômica, seus líderes precisam aplicar lentes críticas no desenvolvimento de programação on-line para garantir que matrículas diversas levem à equidade.

Palavras-chave: ensino on-line; diversidade; segregação; escolas *charter*

Whiteness and Economic Advantage in Digital Schooling: Diversity Patterns and Equity Considerations for K-12 Online Charter Schools¹

School choice and charter school policy remain at the forefront of national educational policy conversations in the United States. The fulltime online version of charter schools, here termed online charter schools, have remained controversial within school choice discussions. Online charter schools have the potential to leverage technology to improve teaching and learning, but also the potential for teachers to lose track of students and their progress because students pursue academic endeavors remotely in locations other than a school building.

This study investigates online charter schools across the United States to determine enrollment trends and consider levels of racial and economic diversity in online charter schools. Past research shows that online charter schools have higher percentages of White students and lower percentages of free and reduced lunch students compared to national averages (Gulosino & Miron, 2017). The study presented here expands on previous knowledge because it identifies how enrollment trends differ across U.S. states, while also considering the meaning and importance of diversity in online schools.

Researchers, policymakers, and school leaders must understand enrollment patterns in online charter schools to determine if enrollments limit or enhance opportunities for historically marginalized students (Rooks, 2017, Ch. 5). Additionally, this study adds to school choice scholarship because it explores a choice scenario of online schools with unique spatial dynamics that are less limited by geography, as opposed to the place-based nature of segregated and non-diverse traditional public and brick and mortar charter schools (Frankenberg, Siegel-Hawley, & Wang, 2010; Kotok, Frankenberg, Schafft, Mann, & Fuller, 2017). The unique aspatial nature of online charter schools raises the potential for different diversity patterns than seen in traditional schools. To consider these topics this study answers the following questions:

1. Are online charter schools more or less racially and economically diverse than brick and mortar schools in their states?
2. How do online charter diversity patterns differ across states?

Charter and Traditional Public Schools and Diversity

Charter schools begin when an organization receives a charter from an authorizer decided by state law. After receiving the charter, appointed board members and staff in the organization open and manage the newly chartered school. Students within legally mandated geographic radiuses enroll in these schools without paying tuition (Ravitch, 2011). Charter schools thus reflect logics linked to neoliberal school choice theory, which expects choice and deregulation to lead to innovation, efficiency, school improvement, and equity (Hoxby, 2001, 2003; Chubb & Moe, 1990; Friedman, 1955).

Online charter schools began in the early 1990s. These schools enroll approximately 200,000 students per year across 25 states (Evergreen Education Group, 2014). Online charter schools provide K-12 students their full educational experience in an online environment and operate under the charter governance structure. Despite significant enrollment growth, data and research on online charter schools have not kept pace with enrollment (Saultz & Fusarelli, 2017). Researchers need to continue to develop knowledge so policymakers can understand how online charter schools relate to educational opportunity for all students in the United States.

¹ The Michigan Virtual Learning Research Institute (MVLRI) helped fund this research.

Students must choose to enroll in online charter schools to attend them. This process differs from how students enroll in traditional public schools because traditional schools rely on localized school district boundaries. Due to schools zones, housing decisions, and a number of other social forces, traditional public schools remain segregated, and typically school sites have racially and economically homogenous populations, despite the U.S. Supreme Court eliminating *de jure* segregation (Orfield, Ee, Frankenberg, & Siegel-Hawley, 2016). Since boundaries are hypothetically less relevant in school choice plans, models like charter schools have the potential to diversify student populations (Orfield & Frankenberg, 2013).

Despite the possibility for diversity and integration, many charter schools lack diversity and charter schools are perhaps more segregated than traditional public schools (Frankenberg, Siegel-Hawley, & Wang, 2010), though patterns differ in some locations (Ritter, 2017). Charter schools often are located in urban environments with high levels of minority students, which partially explains a lack of racial diversity due to high levels of minority isolation in urban schools and White isolation in schools outside urban areas. However, even when opportunities for racial diversity and integration exist in urban spaces, students continue to enroll in racially homogenous charter schools (Kotok et al., 2017; Stein, 2015).

Additional reasons that charter schools, as well as other schools of choice, maintain homogenous student populations rest on the understanding that families of different social class use different criteria to select schools and homes (Lareau & Goyette, 2014). Parents within school choice environments make choices that reflect an array of logics that range from different perceptions of school quality and performance, segregated social networks, alternate educational goals, and explicit or implicit racism (Bell, 2009; Berends & Zottola, 2009; Billingham & Hunt, 2016; Holme, 2002; Marsh, Carr-Chellman, & Sockman, 2009). Charter schools recruit high proportions of minority students for specialized programs (Rapp & Ecks, 2007). Schools of choice may shape enrollments with targeted practices that reinforce economic and racial divisions (Jabbar, 2015).

Online charter schools have the potential to become more racially and economically diverse than brick and mortar schools because they ease enrollment barriers linked to geography. State policies tend to remove residential and school district boundary limitations (though choices are restricted by state boundaries) and parents do not have to travel for their students to attend online charter schools. Students log into online charter schools from a distance. This provides an opportunity to see enrollment patterns that are not limited by the impediments that geography causes, though other factors such as targeted recruitment, segregated social networks, and differing perceptions of quality may still occur.

Online Charter School Enrollments

Online charter school enrollments have increased during the last decade. On average, online charter schools enroll about 200,000 students per year across 25 states (Evergreen Education Group, 2014). Online charter schools serve niche populations of students with goals relating to learning remotely from a distance (Ahn, 2011).

While enrollments have increased, academic research offers criticism of online charter schools based on operations and outcomes. These critiques include concerns of limited financial oversight and poor operational practice (DeJarnatt, 2013; Hasler Waters, Barbour, & Menchaca, 2014). Research on academic outcomes shows online charter schools perform lower than traditional schools on several achievement measures, including Adequate Yearly Progress scores and graduation rates (Molnar et al., 2013). Student-level studies show lower rates of learning growth in online charter schools (Ahn & McEachin, 2017; CREDO, 2015).

The growth of online charter schools alongside knowledge of low-performance has led to scholars studying enrollment trends, including patterns nationally and at a couple single-state locations (Barbour, Miron, & Huerta, 2017; Molnar et al., 2017). On average, students in K-12 online non-charter and online charter schools are more likely to be White compared to national demographics and less likely eligible for free and reduced priced lunch, although findings differ in studies in at least two states (Ahn & McEachin, 2017; Gulosino & Miron, 2017; Mann & Baker, 2019).

The discrepancies in these findings have supported two main arguments about enrollment equity in online charter schools. The first argues that online charter schools recruit and marginalize low-income and minority students (Rooks, 2017, Ch. 5). The second argues online charter schools educate more White and higher income students than traditional schools (Gulosino & Miron, 2017). These arguments are not mutually exclusive because state and policy context have the potential to shift patterns in different directions depending on the context of a given online charter school sector. A more complete understanding of online charter school enrollment across state contexts is needed to determine how enrollments relate to segregation, racial and economic diversity, and educational equity.

School Diversity and Online Spaces

Research from the last several decades has shown negative effects of segregated schools and positive effects of diverse schools. Segregated schools limit the educational opportunities of minority students in several ways (Linn & Welner, 2007; Mickelson, 2008). The limitations occur in areas of teacher quality, curriculum access, school discipline, graduation rates, and success in college (as summarized in Orfield & Ee, 2017, pp. 16-18). Racially diverse schools provide benefit to students of color and White students, such as helping foster critical thinking skills needed in a multiracial society, diverse friend groups, and reductions to stereotyping and bias (Mickelson & Nkomo, 2012; Orfield & Ee, 2017; Wells & Crain, 1994).

Student-to-student interactions in full-time online settings are likely less frequent than in traditional public schools due to the nature of the delivery platform. However, social interactions occur in discussion forums, group projects, and other activities (DiPietro, 2010). This means that with current technology (that may change as video conferencing and virtual reality grow in popularity) the limited face-to-face interaction between students in online charter schools may struggle to encapsulate the full advantages of face-to-face diversity seen in brick and mortar schools. This dynamic is undoubtedly a current limitation to diversity and equity in online charter schools.

Another critical limitation is that the current literature on performance on academic indicators suggests that online charter schools have many drawbacks. If studies continue to show subpar academic gains in the sector, it leaves open the possibility that online charter schools may fail to provide equitable learning outcomes, even if they accomplish diversity in their enrollment patterns. One could easily argue that a low-performing online school with limited face-to-face interaction inherently will struggle to meet equity goals even if it achieves racial and economic diversity in enrollments.

With limitations in mind, scholars and school leaders need to have a conversation about what diversity and equity look like in an online school. One way to start this conversation is to consider racial and economic diversity patterns in enrollments, but in this conversation we also need to remember that enrollment diversity does not guarantee educational equity. In short, it is difficult to consider any potential ideas or solutions for equitable practices without first having a complete understanding of the current student population of online charter schools.

Alongside conversations of enrollments in online schools, scholars have begun to create a framework called ‘critical digital pedagogy’ to advance the conversation of the meaning of equity, diversity, and inclusion in online learning spaces. A key tenant of critical digital pedagogy is that practitioners need to consider the inherent Whiteness and power embedded in the structure of their online spaces (Stommel, 2014). Online charter school leaders and teachers should consider their enrollment patterns, academic performance, and equitable practices. The job of equity is not finished in schools that simply achieve diversity in enrollments.

Scholars and policymakers have yet to have a robust conversation about diversity and its benefits and drawbacks in online schools. Nor have they discussed how to use frameworks like critical digital pedagogy in their design. However, before this conversation is possible, scholars need to understand the nuances to school enrollment in online schools. Online charter schools provide an ideal starting point to achieve this goal. While critical digital pedagogy should inform ideas about diversity in online spaces, these conversations are difficult to conduct until researchers develop knowledge of enrollment patterns and if they reflect racial and economic diversity.

Online charter schools have the capability to enroll students from a wide span of geographic locations, so they have the potential to serve a more diverse set of students than brick and mortar schools. Only when opportunities for diversity reflect enrollment patterns can educators develop strategies to ensure practices with a diverse student body are equitable (or even consider if equity is possible in an online space). This study raises this conversation about diversity in online schools and begins to pose these ideas by first addressing the extent to which one form of online schooling is sufficiently diverse in enrollment.

The study presented here pushes the K-12 online learning conversation toward discussions about equity and diversity. However, scholars need to continue researching all domains of online schools, especially academic achievement, to be sure conversations about equitable practices bear fruit. If online charter schools continue to underperform on academic measures, it could be that equity considerations mean limiting enrollment to only select students who have few other options in K-12 settings. Regardless of paths forward, the research presented here provides necessary knowledge on the current state of enrollments in online charter schools.

Methods

The National Center for Education Statistics’ (NCES) Common Core of Data (CCD) collates yearly enrollment data. The most recent available at the time of analysis was from the 2015-16 school year.² The dataset includes variables that identify if a given school is online or not and governed under a charter or not. The researcher identified schools that were charter and online, which led to identifying 241 schools across 20 states. While 25 states (including Washington, DC) are known to have online charter schools, this study includes only 20 because it did not include those states without appropriate data on online charter schools in the NCES dataset.³ All of the

² The researcher also analyzed data from 2014-15 for robustness, finding almost identical results. While some online charter patterns change over longer periods of time (as shown in Mann & Baker, 2019) the purpose of this study was to examine the most recent state of online charter school enrollments. The 2015-16 dataset was the most current at the time of analysis.

³ These states/jurisdictions include Arkansas, District of Columbia, Georgia, Idaho, and Texas. The researcher identified limited information about these states in the NCES datasets (after observing multiple years). Other reporting (Evergreen Education Group, 2014) also indicates 25 states have online charter

online charter schools in the dataset had racial demographic categories and 201 (83.40%) reported Title 1 status.

The researcher used the same NCES data to create a dataset of all other traditional public and charter schools in the 20 states in order to compare patterns. The traditional public and charter school dataset included 43,681 schools. All schools reported racial demographics and 98.99% reported Title 1 status. The race categories reported in the findings are White, Black, and Hispanic because they represent the largest demographic groups in the United States (Orfield, Ee, Frankenberg, & Siegel-Hawley, 2016).

Using these data, the researcher examined the extent to which online charter schools reflected racial demographics and Title 1 statuses of other schools in each state. The primary point of comparison was a sample of all types of schools in each state (brick and mortar traditional and charter as well as others such as magnets). Private school enrollments were not included due to a lack of data availability. The justification for comparing online charter schools to a pool of all publicly governed schools was because online charter schools are statewide programs pulling students from across areas and sectors. Since they are statewide programs, it is appropriate to compare them to other schools statewide. However, Appendices A, B, and C report descriptive percentages to show how sectors differ, providing a reference for interested readers on how online charter schools compare when the schools of each state are further broken out into traditional public schools and brick and mortar charter schools.

The first step in the analysis was to explore descriptively how online charter school enrollments compared to all other traditional public and charter schools. Then, the researcher created an Exposure Index, a common strategy used in segregation and diversity research. The term Exposure Index is essentially shorthand for reporting two other indices together, the Isolation and Interaction Indices. These indices are more refined than overall percentages of schools because they capture the mean proportional enrollment demographics a student encounters, on average, from a given demographic group. The findings show how the Exposure Index differs in online charter schools compared to all other schools.

Descriptive Comparisons

The descriptive comparisons include three main components. The first is an overview of the proportional enrollment of K-12 online charter schools in each state. Using ArcGIS software, the researcher divided the number of K-12 online charter students by the total number of K-12 students in each state to determine the percent of students who enrolled in online charter schools in the 2015-16 school year in each state. These percentages were then mapped. The second descriptive component determined the number of White, Black, and Hispanic students in online charter schools compared to other public and charter schools at both the national and state levels. The third descriptive component determined the percentage of online charter schools marked as Title 1 schools and compared them to the percentage of other schools reporting Title 1 status at both the national and state levels.

The justification for using Title 1 rests on data reporting constraints. One measure of economic status is free and reduced lunch eligibility (FRL), but since online charter schools tend not to be place-based (and thus lack the capacity to provide school lunch), there seems little incentive for families to fill out FRL forms. Not surprisingly, there was wide variation of FRL status across the dataset, making the indicator unreliable. Title 1 status relies on the U.S. Census definition of low-income to determine if schools receive this designation. If more than 40% of a school is low-income

schools. There may be other states with online charter schools not reflected in national datasets due to faulty reporting.

according to Census classifications, then the school receives a Title 1 school wide program designation. This means the reason for using Title 1 status in this comparison is that other measures of economic status were unreliable in the data reporting, and Title 1 served as a better, more reliable measure.⁴ Due to the issues with FRL and advantages of using Title 1 status, this study examines differences in racial diversity through student enrollment patterns and economic differences through the Title 1 status of schools. The economic differences are reported in descriptive sections, but not in the Exposure Index because the Exposure Index relies on student enrollment figures, while Title 1 is a schoolwide indicator.

Exposure Index: Isolation and Interaction

The Exposure Index is defined as the paired reporting of the Isolation and Interaction Indices to show the extent to which students are in schools with students of their same or different race (Massey & Denton, 1988, pp. 287-288). Students with higher isolation are less likely to enroll in a school with students of another race. Students with higher interaction are more likely to enroll in a school with students of another race.

Isolation and interaction may reflect other demographic trends such as state population. For example, students in states with high majorities of White students have a greater chance to be in White isolated schools. Therefore, the indices here are presented at both the national and state levels. If they differ from statewide schooling demographics, it indicates online charter school demographics do not reflect state demographics. The indices were created for both the dataset of online charter schools and the dataset of other schools for comparison.

Isolation represents the percent of the same demographic group encountered, on average, by a student of that demographic group. Interaction represents the percent of a different demographic group encountered, on average, by a student of another demographic group. For example, a Black Isolation Index score of 0.95 means a Black student attends, on average, a school with 95% Black students. A Black-White Interaction Index score of 0.65 means a Black student attends, on average, a school with 65% White students. The following Isolation Index equation determined isolation across the set of 20 states and also within individual states to determine the racial isolation for each racial demographic in online charter schools and all other schools:

$$\text{Isolation} = \sum_{i=1}^n \left(\frac{x_i}{X_T} \right) \left(\frac{x_i}{t_i} \right)$$

Where n is the number of schools; x_i is the population of a given demographic (e.g., White) in school i ; t_i is the total population in school i ; and X_T is the total population of a demographic (e.g., White) of the broader sector/grouping of schools (e.g., all online charter school students in a state or country).

The following Interaction Index equation determined interaction across the set of 20 states and then within individual states to determine the racial isolation for each racial demographic group in online charter schools and all other schools:

$$\text{Interaction} = \sum_{i=1}^n \left(\frac{x_i}{X_T} \right) \left(\frac{y_i}{t_i} \right)$$

Where n is the number of schools; x_i is the population of a given demographic in a school in school i ; t_i is the total population in school i ; y_i is the comparison demographic group in school i (e.g. Black

⁴ The researcher also analyzed FRL status differences despite data constraints for the sake of comparison. The patterns were still consistent with findings in the Title 1 section of the study.

or Hispanic if x_i is White); and X_T is the total population of a demographic (e.g., White) of the broader sector/grouping of schools (e.g., all online charter school students in a state or country).

When the Isolation and Interaction Indices are presented in tandem it is called the Exposure Index. The Exposure Index therefore shows the average demographics that students of each race encounters in their schools. For example, the presentation would include the following for a White student: White Isolation, Black Interaction, Hispanic Interaction. The numbers hypothetically could be 0.75, 0.20, 0.05. This would mean White students, on average, are in schools with 75% White students, 20% Black students, and 5% Hispanic students.

One way to interpret results is to consider a benchmark of a critical mass of students needed to classify a school as diverse (Jacobsen, Frankenberg, Winchell Lenhoff, 2012). The critical mass figure in previous work is 10% of multiple demographic groups attending a school for it to be considered diverse (p. 825). For online charter school enrollments to be racially diverse in this study, schools should include at least 80% White students, 10% Black students, and 10% Hispanic students.

Diversity thresholds are open to interpretation. One could argue a racially diverse environment should reflect a 70%, 15%, 15% breakdown, or perhaps a 75%-25% breakdown. The 10% threshold is a guiding reference. The findings from the indices are presented in full in a later section on Table 1, so readers can make their own interpretations about the levels of diversity in online charter schools across the United States using different thresholds if they so choose.

Beyond these interpretations, since online charter schools are statewide programs, it is essential to consider statewide demographics in understanding a given Exposure Index. For example, a state with 90% White students may have White students experiencing a 0.90 isolation rate in their online charter school sector. This 0.90 isolation score would have a different meaning than a state with 60% White students and seeing a White isolation score of 0.90 in online charter schools. In the first case, the online charter school index reflects a higher level of White isolation because the state has mostly White students. In the second case, the high White isolation means White students cluster in online charter schools beyond state averages.

For the next portion of the study, the White Isolation Index for online charter students is compared to the White Isolation Index for students in other public and charter schools in the state. The reason for selecting White students is that they are by far the largest demographic group in these datasets and previous research finds they are most likely to attend online charter schools (Gulosino & Miron, 2017).

The final strategy used to understand enrollment patterns is a graph that shows both Title 1 differences and White Isolation Index differences for every state in the dataset. The purpose of this graph is to determine the consistency of online charter sectors in representing the racial and economic patterns of other schools in their state. This allows for a general classification for each state in terms of how racially diverse and economically advantaged online charter schools are compared to other schools in their state.

Findings

Online Charter Enrollment: National Overview

There is no consistent pattern to online charter school enrollment across states. As shown in Figure 1, Pennsylvania, Ohio, and Oregon have more than 1.5% of their student populations in online charter schools. The majority of states with online charter schools (13) have less than 1% of their total student population enrolled in online charter schools. Most states (30) either do not have online charter schools or have not reported online charter schools in their enrollment databases.

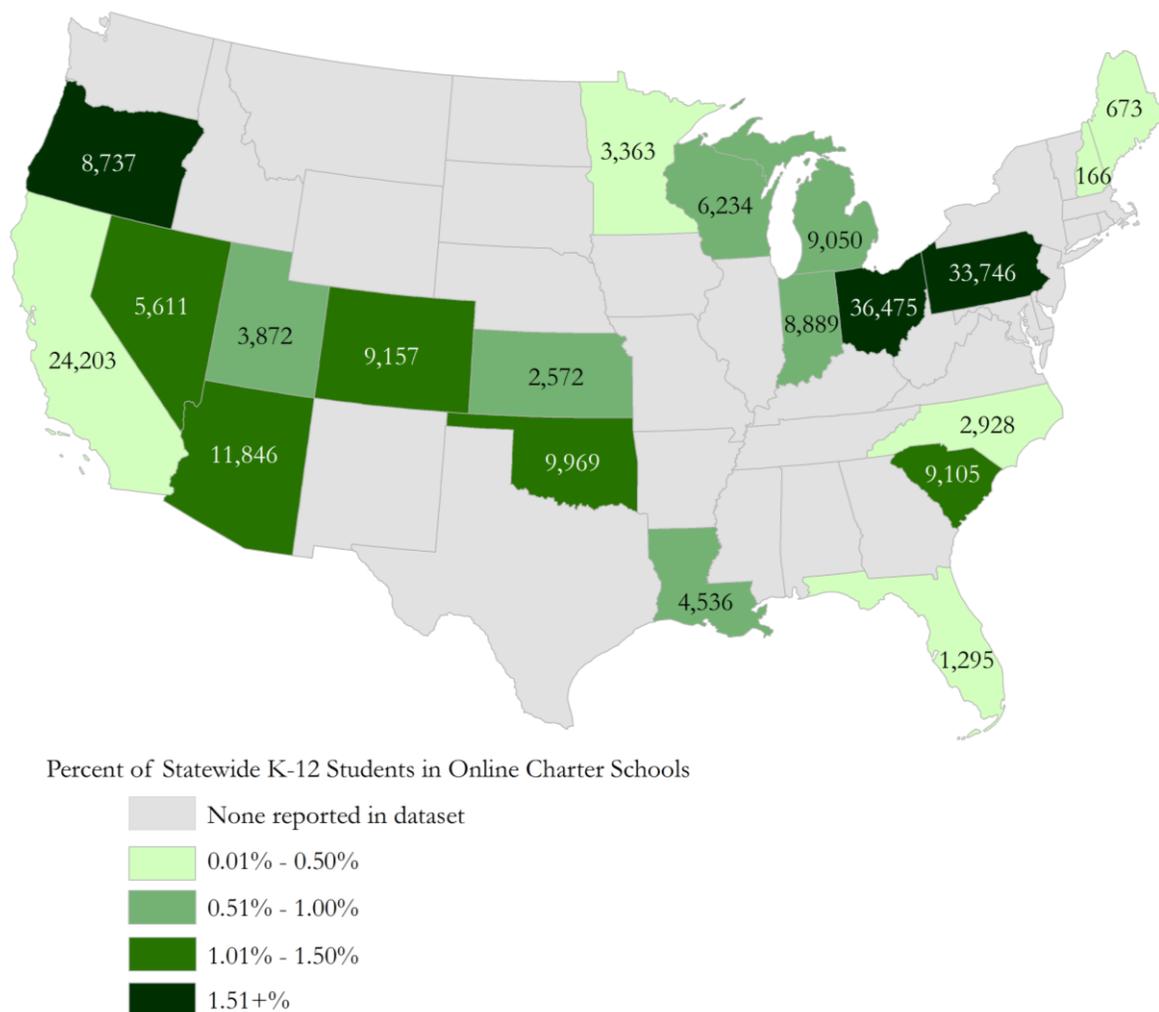


Figure 1. Percentage of K-12 Students in Online Charter Schools in Each State, 2015-16.
 Note: The map shades the percentage of statewide student population enrolled in online charter schools. Total enrollments in online charter schools are enclosed in the state boundaries.

Sector Comparisons on Race: Higher Percentages of White Students

Online charter schools have a higher percentage of White students compared to other traditional public and charter schools in their states (66% in online charter schools compared to 49% White students in other schools in states with online charter schools, as shown in Figure 2). These findings, which examine only states with online charter students, reinforce the findings of other studies that compare online charter enrollment to all student enrollment nationally (Gulosino & Miron, 2017; Molnar et al., 2017).

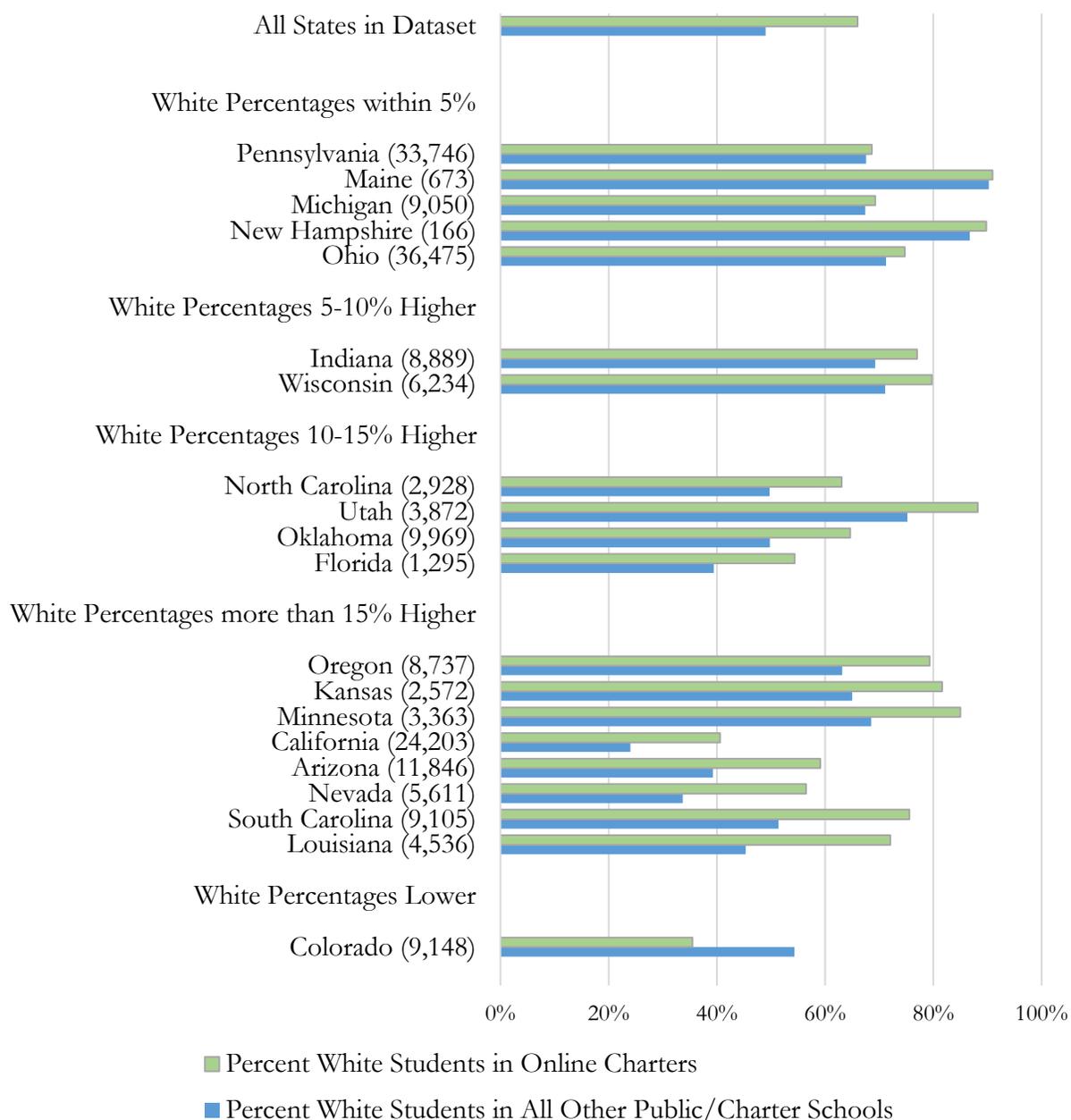


Figure 2. Percentage of White Students in K-12 Online Charter Schools Compared to Other Schools, 2015-16.

Note: The numbers in the parentheses indicate online charter school students in the state. Data are from the National Center for Education Statistics.

While there are higher percentages of White students in online charter schools overall, there are differences by state. As shown in Figure 2, 19 of the 20 states have higher percentages of White students in online charter schools, but the magnitude of difference varies significantly. For example, Pennsylvania, Ohio, and Michigan have demographics in online charter schools that nearly align with the demographics in other schools, while states like Arizona and South Carolina have substantially higher percentages of White students in online charter schools.

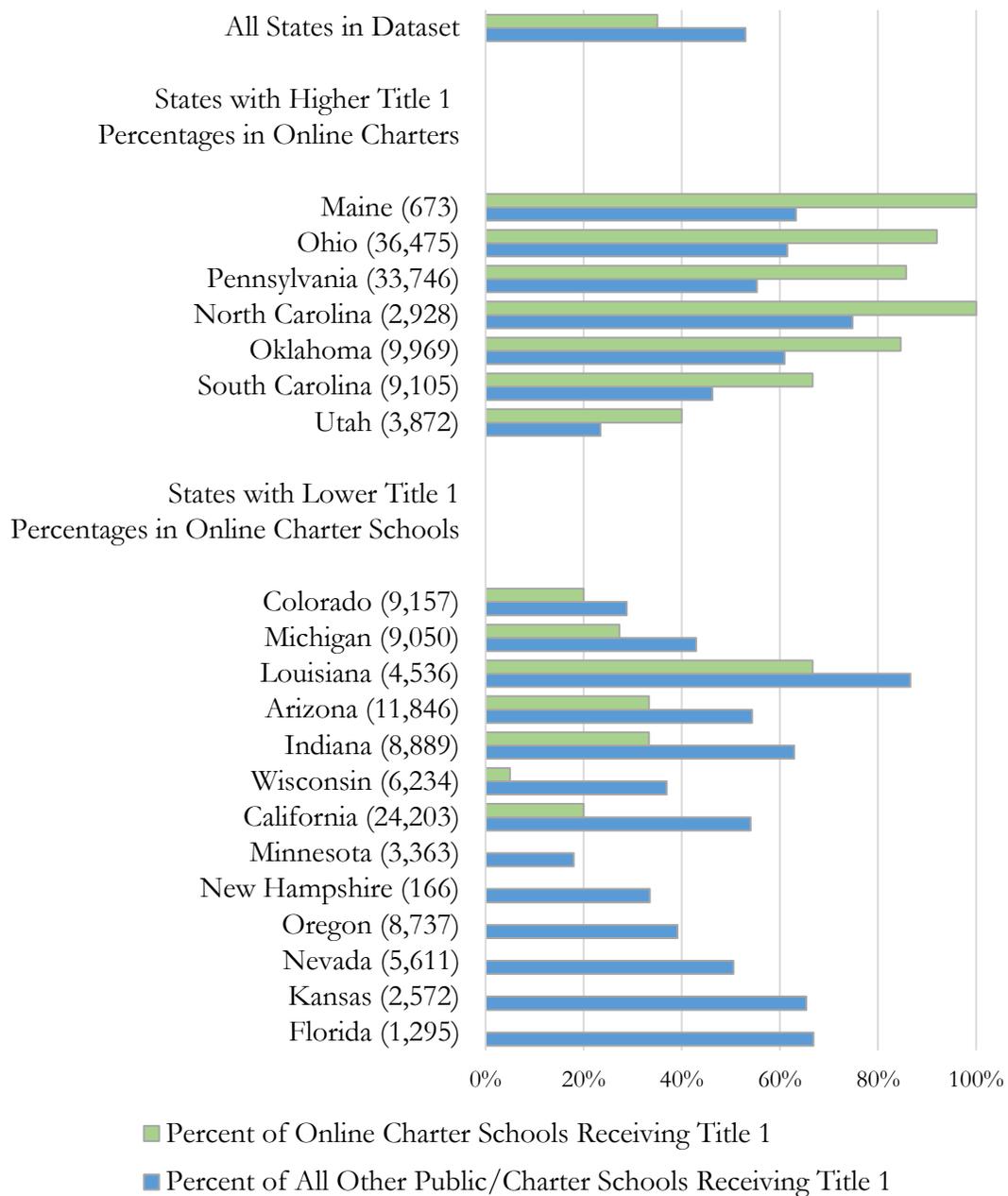


Figure 3. Online Charter Title 1 Compared to Other Schools, 2015-16.

Note: The numbers in parentheses indicate online charter school students in the state. Data are from the National Center for Education Statistics. Six states (the bottom six in the figure) did not have any online charter schools reporting as Title 1 eligible. It is unclear the nature of this lack of reporting.

Table 1
Online Charter Exposure Index: Average Student Racial Demographic Exposure Levels by State, 2015-16

	White Students			Black Students			Hispanic Students				
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic		
All States	0.70	0.11	0.10	All States	0.64	0.16	0.12	All States	0.49	0.10	0.31
AZ	0.61	0.05	0.24	AZ	0.58	0.06	0.27	AZ	0.55	0.05	0.31
CA	0.44	0.09	0.31	CA	0.37	0.12	0.35	CA	0.38	0.10	0.37
CO	0.49	0.04	0.42	CO	0.28	0.06	0.62	CO	0.27	0.06	0.63
FL	0.60	0.17	0.16	FL	0.53	0.23	0.15	FL	0.44	0.13	0.35
IN	0.77	0.09	0.07	IN	0.75	0.11	0.08	IN	0.76	0.10	0.08
KS	0.82	0.04	0.07	KS	0.82	0.05	0.06	KS	0.82	0.04	0.08
LA	0.72	0.19	0.04	LA	0.72	0.20	0.04	LA	0.72	0.18	0.04
ME	0.91	0.02	0.02	ME	0.91	0.03	0.01	ME	0.91	0.01	0.02
MI	0.70	0.17	0.07	MI	0.69	0.18	0.07	MI	0.69	0.16	0.07
MN	0.86	0.04	0.04	MN	0.84	0.04	0.05	MN	0.80	0.04	0.07
NV	0.57	0.12	0.20	NV	0.57	0.12	0.20	NV	0.55	0.11	0.21
NH	0.91	0.01	0.04	NH	0.90	0.01	0.04	NH	0.90	0.01	0.04
NC	0.64	0.17	0.09	NC	0.64	0.17	0.09	NC	0.62	0.16	0.10
OH	0.75	0.12	0.04	OH	0.73	0.15	0.05	OH	0.73	0.13	0.05
OK	0.65	0.08	0.09	OK	0.65	0.08	0.09	OK	0.65	0.08	0.09
OR	0.80	0.02	0.10	OR	0.80	0.02	0.10	OR	0.79	0.02	0.10
PA	0.71	0.16	0.07	PA	0.65	0.21	0.09	PA	0.59	0.18	0.18
SC	0.76	0.15	0.04	SC	0.75	0.17	0.04	SC	0.76	0.14	0.05
UT	0.89	0.01	0.05	UT	0.87	0.01	0.06	UT	0.85	0.01	0.08
WI	0.81	0.06	0.07	WI	0.75	0.10	0.08	WI	0.77	0.06	0.10

Note: The “All States” Exposure Index (in blue) is likely biased by differences in state demographics, creating a need for a state-by-state analysis. The green highlighted rows represent if a student of a given racial demographic group attends, on average, a racially diverse school according to diversity thresholds.

Fewer Title 1 Online Charter Schools in Most States

There are lower percentages of online charter schools receiving Title 1 funding on average across the 20 states than other traditional public and charter schools. However, as seen in the racial demographics, variation occurs across states. Seven states have substantially higher percentages of online charter schools receiving Title 1 funding than other schools. These seven states include the two largest online charter school sectors, Ohio and Pennsylvania. While previous research has shown that online charter schools tend to be more economically advantaged nationally (Gulosino & Miron, 2017), this finding is not consistent from state to state.

The National Online Charter Exposure Index

The online charter Exposure Index as shown in the “All States” highlighted blue row in Table 1 suggests that students of all demographic groups are likely to enroll in schools that are majority White. On average, White students are in online charter schools that are 70% White, 11% Black, and 10% Hispanic. On average, Black students are in online charter schools that are 64% White, 16% Black, and 12% Hispanic. On average, Hispanic students are in online charter schools that are 49% White, 10% Black, and 31% Hispanic. These differences suggest that there are high numbers of White students in the schools overall, but, nationally, the average online charter school student attends schools with lower extreme racial isolation than seen in brick and mortar schools.

The national trends of a lack of isolation do not consistently hold from state to state, as the Exposure Index differs significantly. In some states, such as Utah, nearly all students enroll in overwhelmingly White online charter schools. In Arizona, a given student enrolls, on average, in an online charter school that is around 55-60% White and 25-30% Hispanic. This means generalizations at the national level do not capture state-level patterns.

Nationally, White, Black, and Hispanic students encounter schools that are racially diverse (just barely, according to the critical mass thresholds presented earlier). However, the green highlighted rows in Table 1 show isolation and interaction situations that meet the diversity thresholds. Only in Florida and Nevada are White students, on average, in racially diverse online charter schools. Only in California, Florida, and Nevada are Black students, on average, in racially diverse online charter schools. And only in Pennsylvania, North Carolina, Nevada, Florida, and California are Hispanic students, on average, in racially diverse online charter schools.

These findings of isolation and exposure are influenced by the demographics of states. Therefore, the next strategy to understand how online charter school diversity compares to statewide demographic averages is to examine levels of isolation and interaction to other schools within each state. Figure 4 focuses on the differences in White isolation (the average percentage of White students that the average White student experiences in an online charter school). White students represent the largest demographic group in the online charter sector, which is why they were chosen for this portion of the study.

Figure 4 shows that White students in online charter schools encounter, on average, about the same percentage of White students in other schools nationally. However, White students in online charter schools in 13 states attend, on average, schools with more White students than other schools, whereas isolation is less in seven states. That a higher number of states have greater White isolation in the online charter sector is not surprising given the higher percentage of White students in online charter schools overall. Again, a noteworthy finding in White isolation is that these patterns are not consistent across states; many states have lower White isolation in online charter schools.

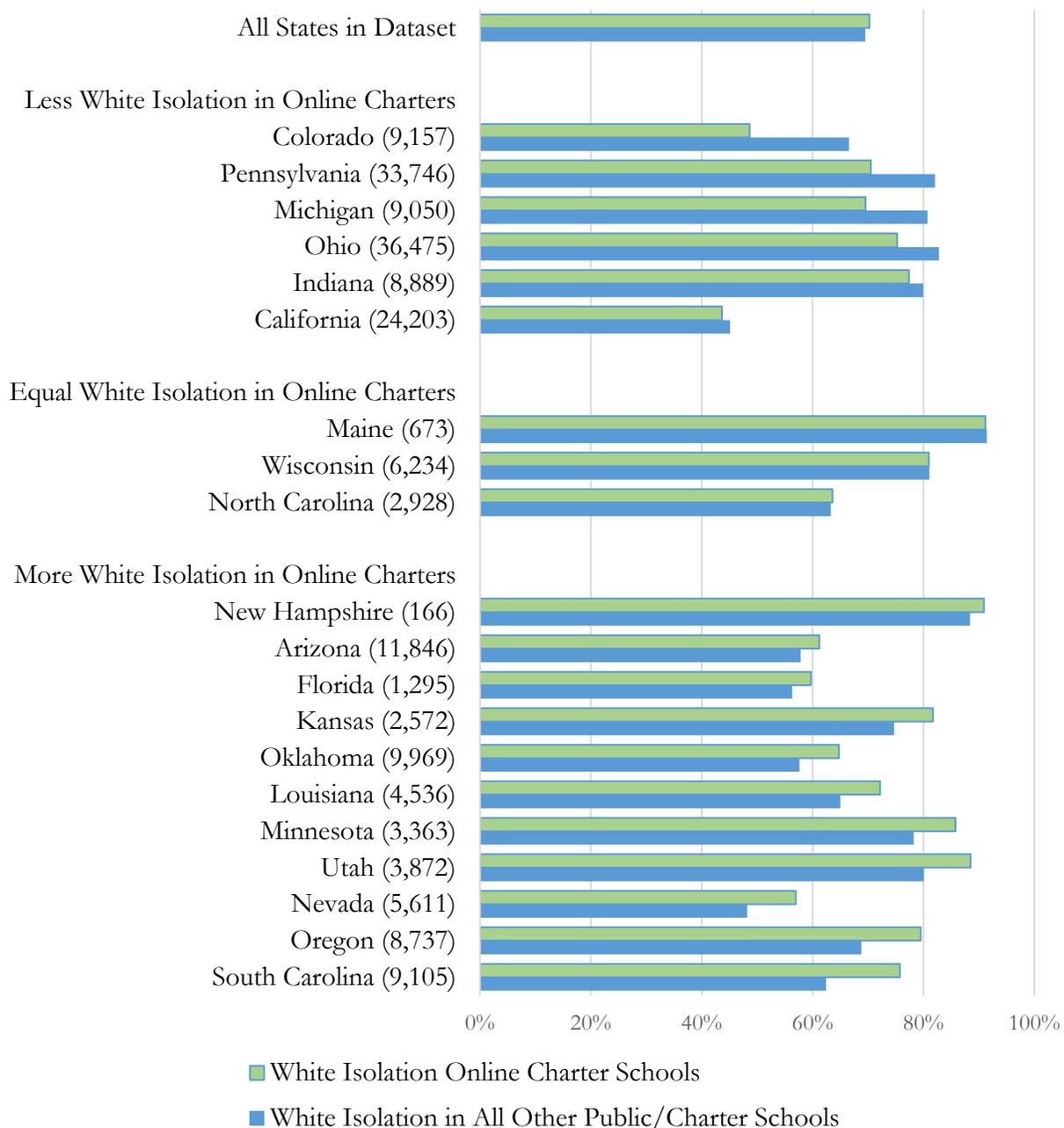


Figure 4. White Isolation in Online Charter Schools compared to Other Schools by State, 2015-16. Note: The numbers in the parentheses indicate the number of online charter school students in the state. Data are from the National Center for Education Statistics.

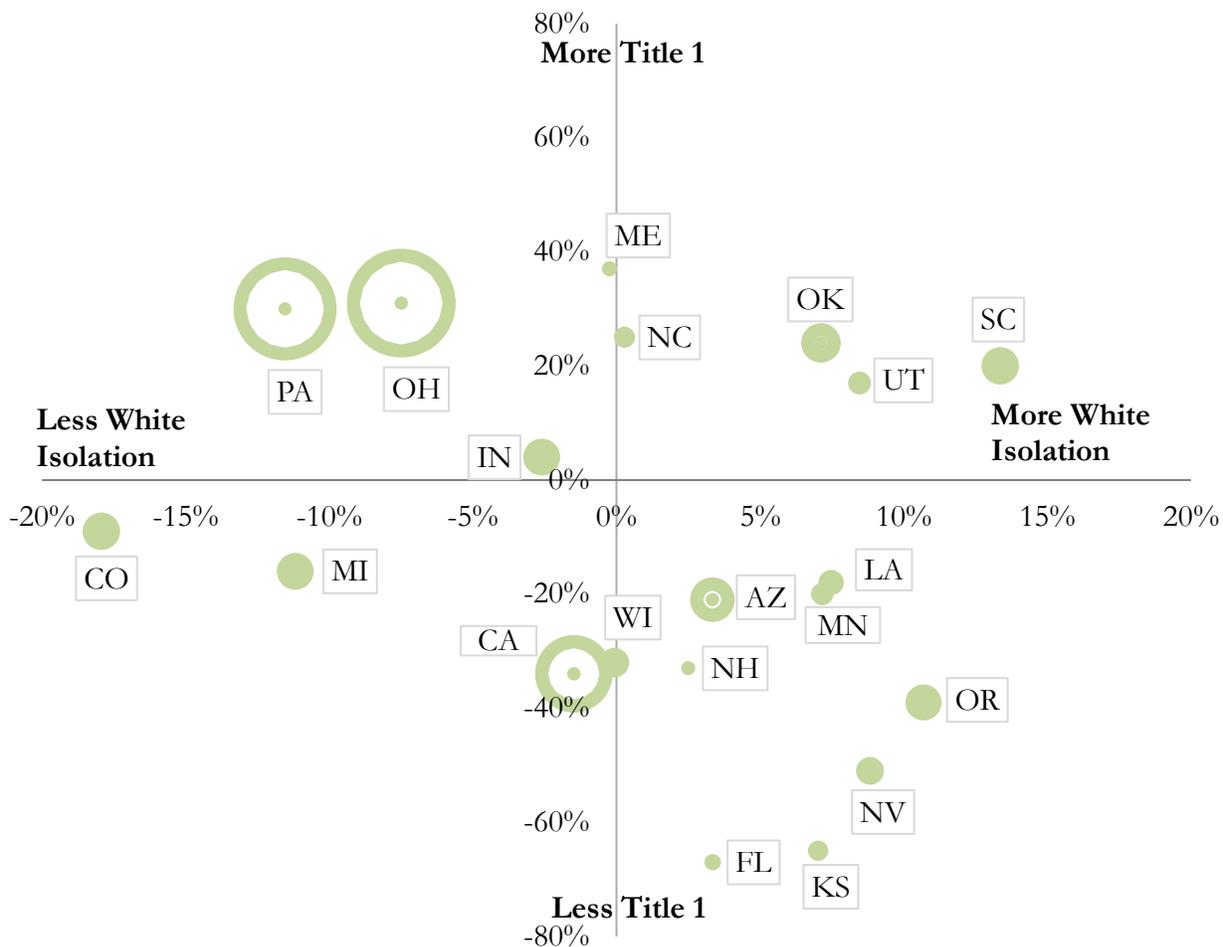


Figure 5. State Online Charter School Title 1 Status and White Isolation Compared to Other Schools by State, 2015-16.

Note: Each point represents where an online charter school sector compares to other public and charter schools in its state. For example, South Carolina has close to 20 percentage points higher Title 1 schools. Meanwhile, White students in South Carolina, on average, go to school with 13 percentage points more White students. The size of the circles are proportional to the number of online charter schools enrolled in the sector.

Figure 5 merges Title 1 and White isolation findings, plotting each state on a quadrant that shows where each online charter sector falls on both classifications relative to other schools. The x-axis is the percentage point difference in White isolation between the state and online charter school enrollments. For example, a White online charter school student in South Carolina attends, on average, a school with 13 percentage points more White students than other schools in the state. The y-axis shows the difference in Title 1 status. For example, Maine has 40 percentage points more online charter Title 1 schools than other schools in the state.

Figure 5 reveals wide variation in patterns across the United States in these classifications. In addition to wide variation, Figure 5 shows that the average state falls within the “more White isolation/less Title 1” quadrant of the graph and many states follow this pattern; however, two notable exceptions are the two highest enrolling online charter school states of Pennsylvania and Ohio. These states fall within the “less White isolation/more Title 1” quadrant. This captures the lack of consistency in online charter school enrollments across the country compared to brick and mortar schools. What these differences mean are topics for future research, but at least one other

study shows that Pennsylvania findings are likely driven by a diverse sector where schools stratify by race. The larger enrollments reflect the presence of large online charters that pull students from areas across the state, while there are also some small online charters exclusively drawing from local, mainly White populations (Mann & Kotok, 2019).

Discussion and Conclusion

Online charter schools have higher percentages of White students than other traditional public and charter schools in the states where they operate. As such, there is a general lack of diversity in online charter school enrollment across the United States. There are also lower percentages of online charter schools that are classified as Title 1. These results are consistent with previous research.

While national findings align with previous research, the findings in this study deviate in that they show that patterns of online charter school enrollment differ by state. Most states have majority White online charter school populations with less diversity in online charter schools than in other schools. However, there are states where students enroll in more racially and economically diverse environments in online charter schools.

These findings mean that policymakers and online charter school leaders should not generalize findings from national studies and instead rely on context-specific understandings. Stakeholders in each state need to explore patterns within their own states to understand their enrollment distributions. The specifics in the patterns of online charter school enrollment differ in a number of ways. For example, the robust online charter school sectors in Ohio and Pennsylvania enroll greater shares of low-income, White students. These patterns are different than states with lower online charter school enrollments like Idaho and Utah. State demographics, sector size, and histories of online charter schooling in each context likely drive these differences. Researchers should move toward examining specific state contexts in order to determine the precise factors that have led to differences in enrollment patterns.

State policies and local histories of online schooling likely drive the patterns seen in this study. Pennsylvania, for example, has rather permissive online charter school laws leading the sector to have much higher enrollments than most other states. While these laws have allowed a number of new schools to open, the ballooning enrollment may not reflect equity in terms of within sector school placements (Mann & Kotok, 2019). In the findings presented here in this study, Pennsylvania's online charter school enrollment growth has made it differ from other states because greater numbers of low-income students have entered the sector. What this means for equity is still a question for debate, and the hope is that this study starts this conversation. As state policy has shaped overall enrollment, it has a role to play in continuing to shape patterns. States could consider enrollment caps, regulations on marketing and recruitment, information distribution channels, and equity audits as tools to influence the development of online charter school enrollments.

While enrollment demographic patterns are essential in understanding diversity patterns, these findings should also be considered as a first step in guiding administrators toward discussing the meaning of diversity and equity in online spaces. The next steps must include investigating practices within online charter schools to ensure that programmatic and academic decisions are made in ways that enforce principles of equity and inclusion. To achieve greater diversity in online spaces, as well as achieving equity in online spaces that become diverse, practitioners should critically assess the racial and economic logics and norms driving their practices through conversations that include critical digital pedagogy (Stommel, 2014).

Achieving diverse enrollments alone will not ensure that equity is promoted in online spaces. Online learning structures and spaces are not ‘ideologically neutral,’ so without examining the embedded norms and practices in online learning platforms, we cannot tell if increasing demographic diversity can achieve goals of equity (Stommel, 2014). Online charter school providers cannot only seek strategies to cultivate diverse enrollments with the hope that demographic diversity alone will achieve equity. They also need to think critically about how their platforms and practices reflect socioeconomic norms of Whiteness and power. One step might include considering if online learning has the inherent capability of providing equitable services to students across socioeconomic backgrounds.

Based on struggles seen in previous academic performance measures, achieving equity through online learning may be an elusive goal (Ahn & McEachin, 2017; CREDO, 2015). As shown in the nature of data reporting with FRL, online learning providers seem ill-equipped to handle even the most fundamental difficulties facing low-income students. This suggests that goals of achieving economic and racial diversity in online spaces may not even be desirable unless online charter schools develop well-rounded programs that meet the needs of the whole child. In current formats, achieving diversity for the sake of diversity will likely not lead to equity.

With these critical caveats in mind, the next steps for policymakers, lawmakers, and online charter school operators should be to use this research, reflect on its findings, and consider how, if possible, their own context can move toward diversity and equity in the online charter school space. In some locations, this may mean identifying and changing inequitable and exclusive online charter school enrollment patterns. In other locations, it may mean finding diverse online charter schools and creating meaningful and equitable practices and interactions between diverse populations of students while implementing ideas found in the critical digital pedagogy framework.

A long history of academic research shows that where students attend school and their experience within school locations matter significantly in regards to their academic and socioeconomic opportunity, especially in relationship to patterns of racial segregation and diversity (scholarship such as, but not limited to: Linn & Welner, 2007; Mickelson, 2008; Mickelson & Nkomo, 2012; Orfield & Ee, 2017; Wells & Crain, 1994). This study begins this conversation and raises concerns related to diversity in online spaces in K-12 schooling. While online charter schools tend not to provide environments with racial and economic diversity for many students, there are examples of states where diverse enrollments exist. Ensuring that these enrollments cultivate equitable practices should be the next consideration in these states, but overall we should start a conversation about why, in general, enrollments are currently not racially and economically diverse and what this means for educational equity.

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Appendix A

Total Enrollment and Percentage of White Students across K-12 Sectors, 2015-16

State	Online Charter Enrollment	Online Charter % White	TPS Enrollment	TPS % White	BM Charter Enrollment	BM Charter % White
All States	192,427	65.98%	22,934,235	50.28%	1,809,955	36.16%
Arizona	11,846	59.12%	927,903	38.12%	165,080	45.82%
California	24,203	40.59%	5,640,069	23.57%	544,610	28.70%
Colorado	9,157	35.50%	790,225	54.29%	99,645	54.68%
Florida	1,295	54.36%	2,520,415	40.13%	269,669	33.14%
Indiana	8,889	77.01%	1,006,781	70.51%	30,785	28.62%
Kansas	2,572	81.65%	485,382	64.98%	617	75.53%
Louisiana	4,536	72.07%	644,681	48.45%	69,497	16.51%
Maine	673	90.94%	174,894	90.25%	847	94.33%
Michigan	9,050	69.27%	1,339,482	71.24%	136,623	29.95%
Minnesota	3,363	85.01%	813,186	70.15%	47,457	40.65%
Nevada	5,611	56.50%	432,397	32.99%	29,522	44.26%
N. Hampshire	166	89.76%	178,296	86.82%	2,847	83.39%
N. Carolina	2,928	63.05%	1,462,156	49.36%	79,595	56.89%
Ohio	36,475	74.75%	1,596,545	73.65%	82,152	24.58%
Oklahoma	9,969	64.63%	672,985	50.30%	9,937	14.85%
Oregon	8,737	79.29%	537,334	62.64%	22,003	76.13%
Pennsylvania	33,746	68.61%	1,573,562	70.37%	97,208	22.77%
S. Carolina	9,105	75.58%	734,013	51.25%	20,371	56.09%
Utah	3,872	88.20%	580,472	75.22%	63,530	75.16%
Wisconsin	6,234	79.76%	823,457	72.42%	37,960	43.40%

Note: Data are from the National Center of Education Statistics. TPS is defined as traditional public schools run by school districts. BM charter is defined as brick and mortar schools run and governed through charter school policy.

Appendix B

Total K-12 Schools and Percent Title 1 across K-12 Sectors, 2015-16

State	Online Charter Schools	Online Charter % Title 1	TPS Schools	TPS % Title 1	BM Charter Schools	BM Charter % Title 1
All States	241	34.44%	43,681	53.26%	4,923	50.40%
Arizona	21	33.33%	1,827	55.61%	566	48.23%
California	45	20.00%	9,193	55.62%	1,227	41.56%
Colorado	10	20.00%	1,646	28.86%	220	28.18%
Florida	12	0.00%	3,716	68.73%	696	57.18%
Indiana	3	66.67%	1,842	62.87%	93	63.44%
Kansas	3	0.00%	1,327	65.34%	8	75.00%
Louisiana	3	66.67%	1,255	86.06%	141	88.65%
Maine	2	100.00%	611	63.50%	5	40.00%
Michigan	11	27.27%	3,158	40.44%	386	63.21%
Minnesota	8	0.00%	2,300	15.87%	226	39.38%
Nevada	3	0.00%	641	52.11%	46	28.26%
N. Hampshire	2	0.00%	461	34.71%	29	13.79%
N. Carolina	2	100.00%	2,478	76.96%	175	44.57%
Ohio	25	92.00%	3,276	58.67%	373	86.33%
Oklahoma	13	84.62%	1,773	61.08%	33	54.55%
Oregon	13	0.00%	1,129	41.54%	113	15.04%
Pennsylvania	14	85.71%	2,889	53.89%	175	79.43%
S. Carolina	6	66.67%	1,194	46.73%	66	37.88%
Utah	5	40.00%	932	23.93%	127	19.69%
Wisconsin	40	5.00%	2,033	37.33%	218	33.03%

Note: Data are from the National Center of Education Statistics. TPS is defined as traditional public schools run by school districts. BM charter is defined as brick and mortar schools run and governed through charter school policy.

Appendix C

White Isolation across K-12 School Sectors, 2015-16

Subhead	Online Charter White Isolation	TPS Schools White Isolation	BM Charter White Isolation
All States	0.70	0.70	0.62
Arizona	0.61	0.57	0.62
California	0.44	0.44	0.52
Colorado	0.49	0.66	0.70
Florida	0.60	0.57	0.54
Indiana	0.77	0.80	0.61
Kansas	0.82	0.75	0.79
Louisiana	0.72	0.65	0.55
Maine	0.91	0.91	0.94
Michigan	0.70	0.81	0.67
Minnesota	0.86	0.78	0.75
Nevada	0.57	0.48	0.52
N. Hampshire	0.91	0.88	0.87
N. Carolina	0.64	0.63	0.74
Ohio	0.75	0.83	0.56
Oklahoma	0.65	0.58	0.30
Oregon	0.80	0.68	0.80
Pennsylvania	0.71	0.83	0.61
S. Carolina	0.76	0.62	0.69
Utah	0.89	0.80	0.80
Wisconsin	0.81	0.81	0.77

Note: Data are from the National Center of Education Statistics. TPS is defined as traditional public schools run by school districts. BM charter is defined as brick and mortar schools run and governed through charter school policy.

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