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Understanding the Impact of COVID-19 on Delaware Public School Students

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UNDERSTANDING THE IMPACT OF COVID-19 ON DELAWARE PUBLIC SCHOOL STUDENTS

EXECUTIVE SUMMARY

As a result of the COVID-19 pandemic, students in Delaware experienced significant changes to the way they were educated both towards the end of the 2019–20 academic year and for the duration of the 2020–21 academic year. To explore changes to (1) enrollment, (2) instructional modalities, and (3) attendance policies/technology practice, the Center for Research in Education and Social Policy (CRESP) gathered related data from Local Education Agencies (LEAs) across the state of Delaware.

Findings show that for the first time in 10 years, the state of Delaware experienced a significant drop in enrollment with almost 2,500 less students enrolled during the 2020–21 academic year, representing an 18% decrease in new enrollments and a 21% increase in dropped enrollments from 2019–20 to 2020–21. The majority of students enrolled in Delaware Public Schools attended school either fully virtually or under a hybrid model during the 2020–21 academic year. Only two LEAs in the sample offered a five-day fully in-person learning option for all grade levels. LEAs also adapted and flexed schedules throughout the academic year. While almost all LEAs began the year with fully virtual instruction, by November 2020, most LEAs were offering hybrid instructional options to some grades. By February 2021, LEAs increased the number of hybrid instructional offerings across grades, and by May 2021, all LEAs offered hybrid learning and increased student access to in-person days or fully in-person learning.

To adapt to changed instructional modalities, LEAs implemented new technology to support student learning, including the distribution and use of Chromebooks, iPads and/or laptops. This study found that over 46 different learning platforms were used by Delaware LEAs with Zoom or Microsoft for being the most oft selected platform for virtual instruction. Schoology and Google Classroom were also widely used to manage student assignments, and applications such as ClassDojo, Clever and Remind were used to communicate with parents/guardians. To track attendance during synchronous instruction, the vast majority (90%) of LEAs in the sample counted a student "present" for attendance if a teacher saw a student via Zoom, Google Meet, or in-person. During asynchronous instruction, assignment submissions or Schoology log ins, were utilized for attendance.

This report serves to document some of the unprecedented changes to public education in Delaware during the 2019–20 and 2020–21 academic years. Future reports will explore changes to student achievement as a result of the COVID-19 pandemic.

INTRODUCTION

During the 2020–21 academic year (AY), the Center for Research in Education and Social Policy (CRESP) was approached by the Delaware Department of Education (DDOE) to assist in understanding the changes that occurred in Delaware Public Schools during the COVID-19 pandemic and explore the impact those changes had on Delaware students. Throughout the winter of 2021, CRESP researchers, along with DDOE staff, developed a research plan with members of the Data Forum—a group of educators with various education-data responsibilities from Local Education Agencies (LEAs) in the state of Delaware. After several group meetings and input from school district superintendents and charter leaders, a research plan was finalized.

In accordance with the plan, CRESP first collected and analyzed important contextual data to understand how schools operated during the 2020–21 AY. Once this work was finalized, this contextual data was then assessed alongside the achievement data (Delaware System of Student Assessment and SAT data) from the end of the 2020–21 AY.

Three research questions were developed to provide proper contextual background to schooling during the 2020–21 AY:

1. How did COVID-19 impact enrollment in Delaware Public Schools?
2. What type of instruction did Delaware students receive during the 2020–21 school year?
3. What policies or practices changed as a result of COVID-19?

Research question #3 was designed to look at a broad number of changes within the LEAs. However, to alleviate the data collection tasks on the LEAs, it was agreed upon that CRESP would first look at changes to attendance policies and use of technology before embarking upon a broader analysis of changes.

These three research questions were strategically addressed first, before analyzing any student achievement data. Data related to these questions will be utilized in a forthcoming report to answer research question #4: "How did COVID-19 impact the academic achievement of Delaware students?"

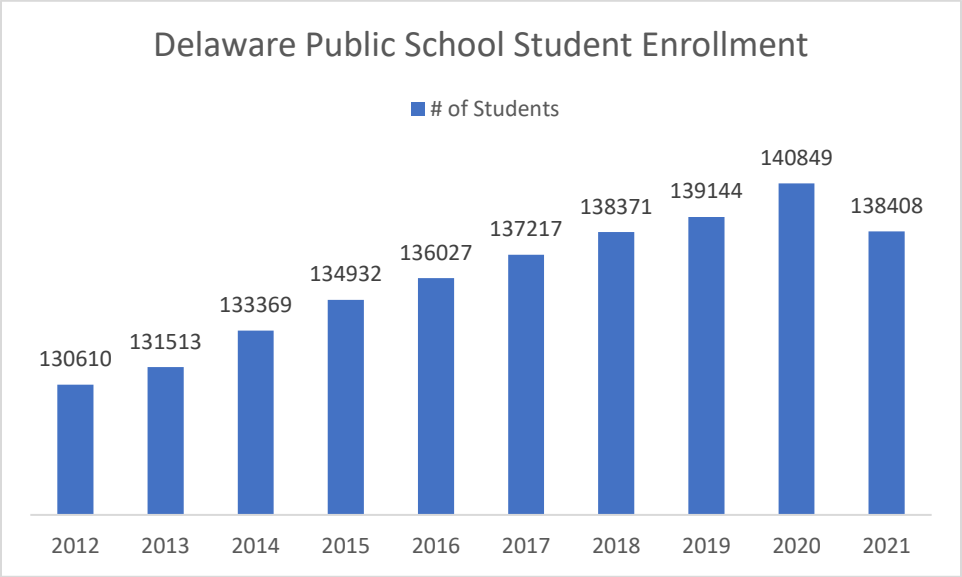
QUESTION 1: HOW DID COVID-19 IMPACT ENROLLMENT IN DELAWARE PUBLIC SCHOOLS?

BACKGROUND

In Delaware, a unit count of students enrolled in public schools is conducted annually on September 30th of each academic year. For the AY 2020–21, the date of the unit count was moved from September 30th, 2020 to November 13th, 2020 as a direct result of the COVD-19 pandemic. For the sake of clarity, the academic year named in this report will refer to the year in which the academic year ended. For example, the 2020–2021 academic year will be referred to as academic year 2021 (AY 21). For the reporting of academic years in figures, the academic year named will refer to the year in which the academic year ended. For example, the 2020–2021 AY will be referred to in figures and tables as academic year 2021 (AY 21).

The state of Delaware saw a 2,441-student enrollment decrease from AY 2019–20 to AY 2020–21 according to Unit Count data (Figure 1).

Figure 1: Unit Count Enrollment for the State of Delaware



This drop in student enrollment is significant because Delaware has not seen any decrease in enrollment in over 10 years. The purpose of this analysis is to investigate how Delaware's school enrollment was impacted due to COVID-19.

METHOD

To conduct this analysis, CRESP requested unit count data for the 2019, 2020, and 2021 AY. Included in this data was student demographic information and student grade level for each

corresponding year. The purpose of our analysis was to first determine what a "typical" transition period looked like (in this case the 2019 to 2020 school year) and compare it to the transition that was impacted by the COVID-19 pandemic (the 2020 to 2021 school year).

FINDINGS

FINDING #1: ELEMENTARY GRADES EXPERIENCED LARGER DROPS IN ENROLLMENT COMPARED TO SECONDARY GRADES

First, student enrollment for 2019, 2020, and 2021 AY was analyzed for year- to-year changes in enrollment. The results of these analyses are depicted in Figures 2 and 3. The first figure, Figure 2, depicts pre-Kindergarten to Grade 6. All these grades experienced drops in enrollment from the 2020 to 2021 AY. Drops in kindergarten enrollment was the most pronounced, with a 507-student decrease from the previous school year. Notably, second grade enrollment had the second largest drop in enrollment for these grades, with almost 500 less students compared to the previous school year.

Figure 2: PK- Grade 6 Enrollment

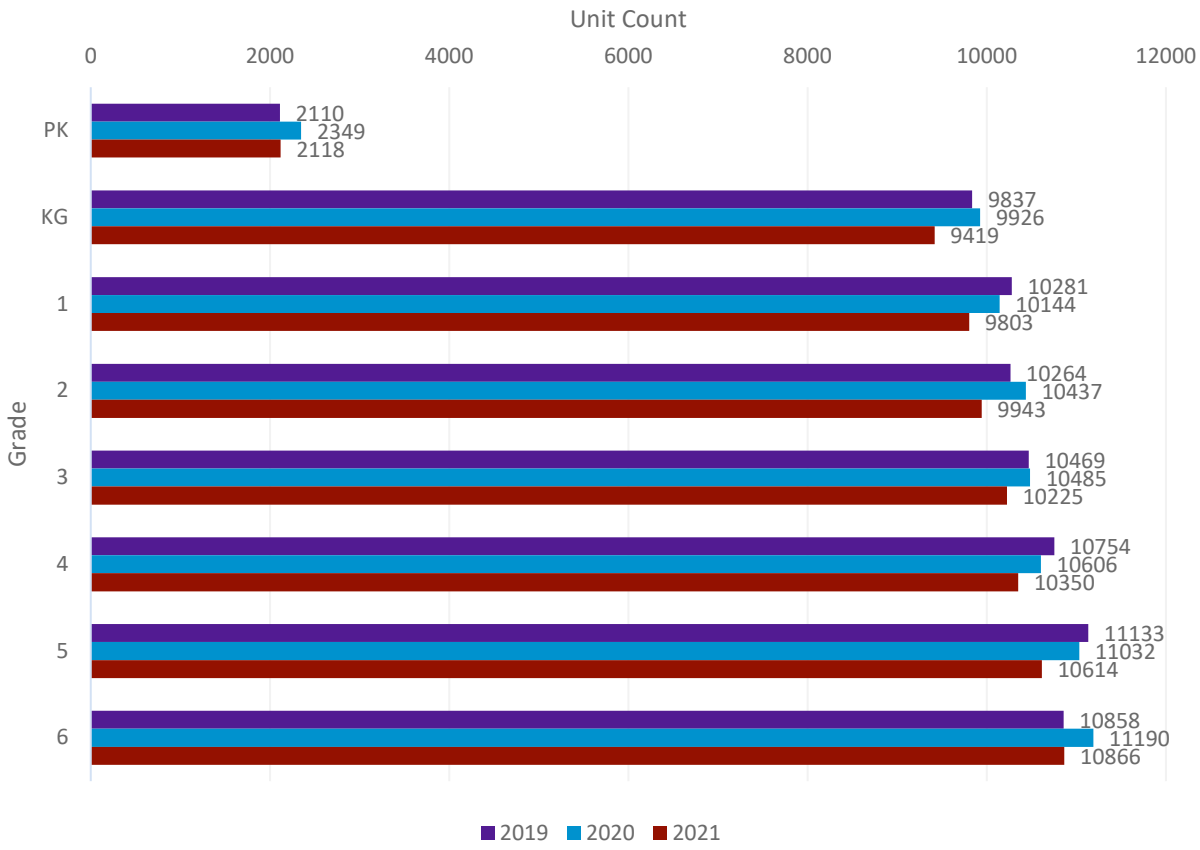
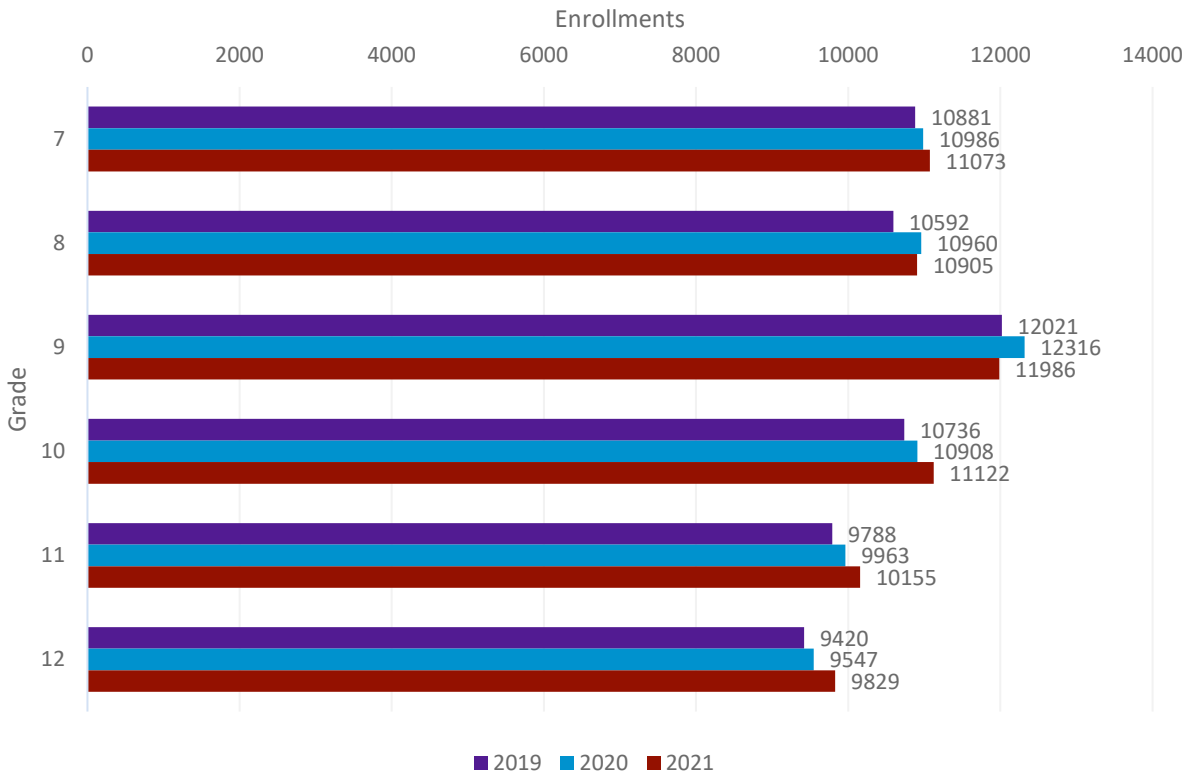


Figure 3 depicts the enrollment totals for Grades 7 through 12 over the past three years. In this figure, only Grades 8 and 9 experienced an enrollment decrease. It is notable that ninth grade saw a decrease of 330 students compared to the previous year. Perhaps surprisingly, the other grades saw an increase in the number of students enrolled compared to the previous school year. Enrollment increases ranged from an 87-student increase in seventh grade to a 282- student increase for 12th grade.

Figure 3: Grade 7 to Grade 12 Enrollment



FINDING #2: THERE WAS LITTLE CHANGE IN OVERALL STUDENT DEMOGRAPHICS AS A RESULT OF COVID-19

Next, changes in student demographics were examined. Enrollment data regarding gender is displayed in Figure 4. For the 2019 and 2020 s AY, the share of male versus female students in Delaware Public Schools remained roughly the same with schools comprised of 51.3% male and 48.7% female students. The 2021 AY saw a slightly higher percentage of female students compared to previous years: 48.9% female compared to 51.1% male. These figures indicate that a larger proportion of male students either left Delaware Public Schools or more female students than male students enrolled during this time period. It should be noted, however, that this shift is rather small—a fraction of a percent.

Figure 4: Enrollment by Gender

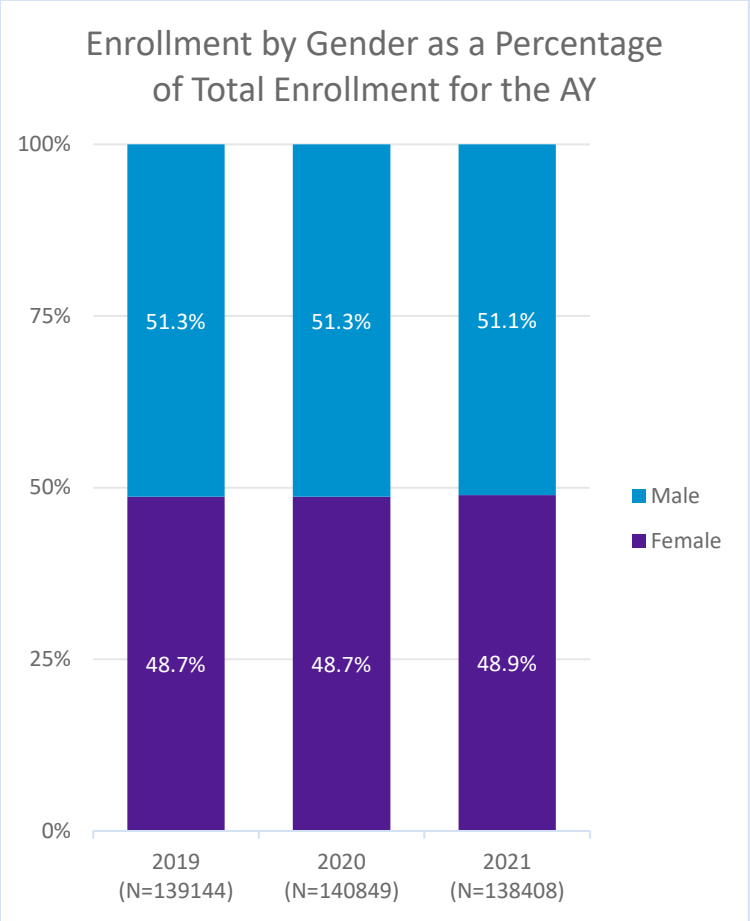
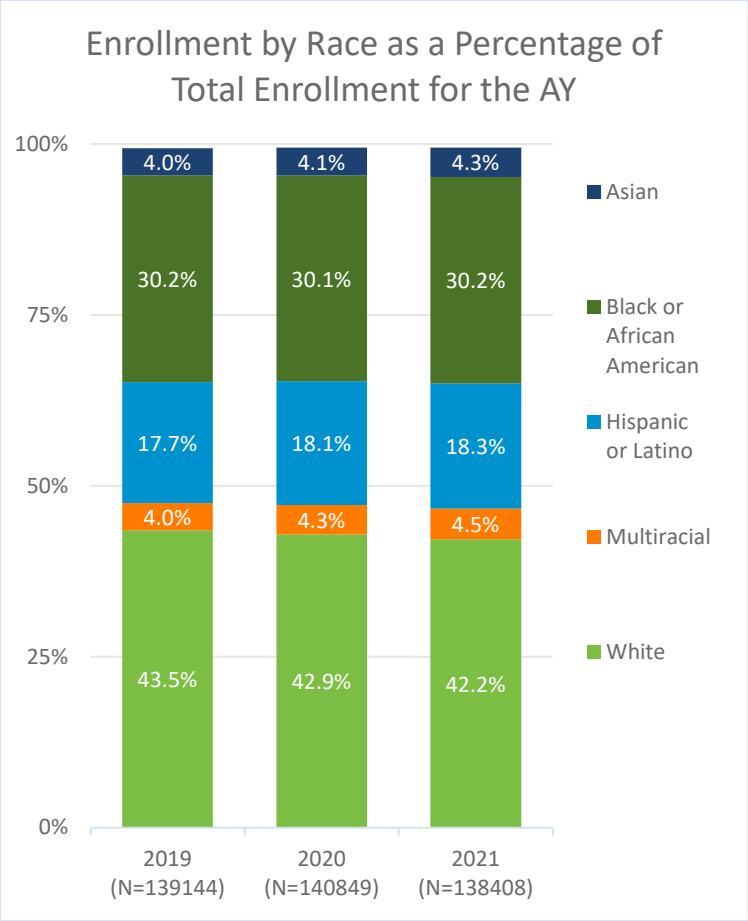


Figure 5 depicts the enrollment over the past three academic years grouped by race. Upon examining changes in enrollment from the 2019 to 2020 AY, slight increases in the share of students who identify as Asian, Hispanic, and Multiracial were seen. There was a slight (0.1%) decrease in the percentage of Black students and a somewhat larger (0.6%) decrease in the percentage of White students. Similar trends were seen when examining the change from the 2020 to 2021 AY. For example, the percentage of Asian, Hispanic, and Multiracial students also slightly increased. The percentage of White students decreased at a similar rate compared to the previous term (0.7% versus 0.6%). The one observed difference was there appeared to be a slight increase in the overall percentage of Black students during this time period (0.1%) versus the slight decrease seen during the previous term. Overall, after reviewing this data, it seems as if any change in the racial demographics in students due to COVID-19 is negligible.

Figure 5: Enrollment by Race



Finally, enrollment for students in special education, English Learners (EL), and low-income students are displayed in Figures 6, 7, and 8. Upon examining this data, little evidence emerges that COVID-19 impacted the enrollment of these subgroups of students. There was a slight decrease in the number of low-income students, but it is possible this is due to the changes made in the eligibility for free lunch and breakfast during this time (free breakfast and lunch was available

to all students which could have decreased the number of parents submitting eligibility paperwork).

Figure 6: Special Education Enrollments

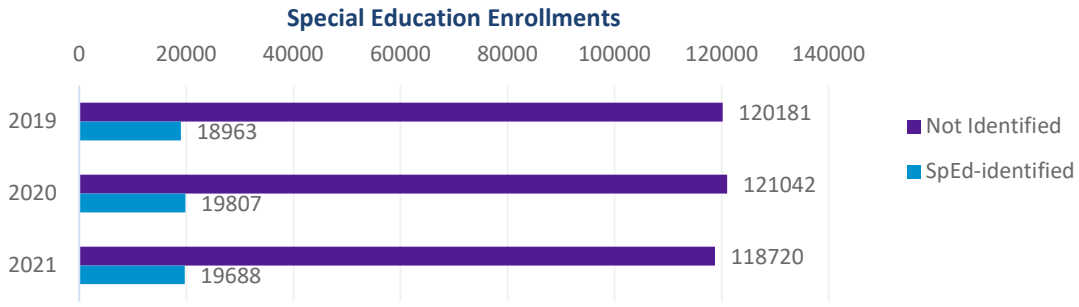


Figure 7: English Language Program Enrollments

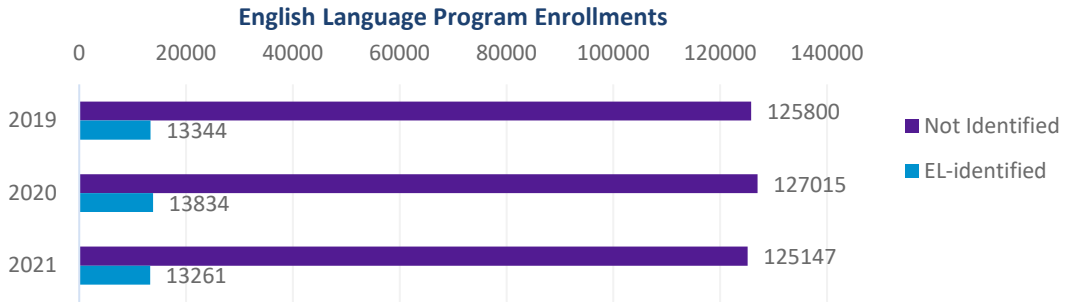
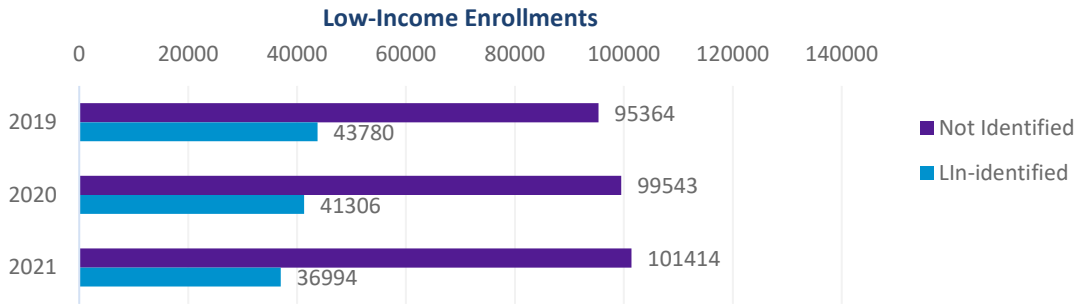


Figure 8: Low-Income Enrollments



FINDING #3: THERE WERE A SIGNIFICANT DROP IN BOTH NEW ENROLLMENTS AND REENROLLMENTS

After examining the overall changes in enrollment in terms of student demographics, we then analyzed student-level data to better understand if the changes in enrollment was due to a lack of new students entering public education in Delaware, or if it was due to previously enrolled students not returning to Delaware public education after the 2020 AY.

We found that among students in our dataset, the majority (*n*=102,208; 74% of the AY 19 enrollees; 59% of total sample) were enrolled in Delaware for three consecutive unit counts and were promoted to the next higher grade during both of the AY transitions (AY 19 to AY 20 and AY 20 to AY 21) under inspection.

The total number of new enrollments in AY 20 (before the onset of the COVID pandemic) is 18,254, whereas the total new enrollments for AY 21 (after the onset of the COVID pandemic) is 14,949. Based on these estimates, there was an 18% decrease in new enrollments from AY 20 to AY 21.

The total number of students who dropped enrollment for AY 20 (i.e., did not return as expected after a PK–11 enrollment during AY 19) is 7,518 whereas the total dropped enrollments for AY 21 is 9,086. Based on these estimates, there was an 21% increase in dropped enrollments from AY 20 to AY 21.

Based upon these findings, we find that the drop in overall enrollment was due to a roughly equal combination of new students not entering into Delaware public education and previously enrolled students not returning for the 2021 AY.

CONCLUSIONS

For the first time in 10 years, the state of Delaware experienced a significant drop in enrollment, seeing a 2,441-student enrollment decrease from AY 2020 to AY 2021. Analyses of enrollment show that elementary grades experienced the largest drops in enrollment with both kindergarten and second grades each experiencing approximately a 500- student decrease from the previous school year. However, while overall enrollment dropped, student demographics saw little change across measures of race, gender, ELs and special education classifications. While there appeared to be a decrease in the number of low-income students enrolled for the 2021 AY, we believe that this may be due to changes in free school lunch eligibility processing that occurred as a response to COVID-19. In consideration of anticipated new enrollments, there was an 18% decrease

in new enrollments from AY 2020 to AY 2021. Similarly, there was considerable increase in those students who did not re-enroll, with a 21% increase in dropped enrollments from AY 2020 to AY 2021.

While this review answers some questions, there are areas for further study. While it is known that younger grades saw the largest decrease in enrollment, our current data does not answer why these students left and where they were educated (either out-of-state, at a private school, at home, or dropped out of school completely). At the time of this publication, enrollment for AY 2022 was reported to be up past pre-pandemic numbers. Consideration should be made to explore where students who returned for the AY 2022 received their education during AY 2021.

QUESTION 2: WHAT TYPE OF INSTRUCTION DID DELAWARE STUDENTS RECEIVE DURING THE 2020–2021 SCHOOL YEAR?

BACKGROUND

While most of Delaware's LEAs began the 2020–21 AY in a virtual model, over the course of the year, districts and charters increasingly offered hybrid (partly in person, partly virtual) instructional programming. Delaware's progression from a mostly virtual start to the school year followed by hybrid instruction, mirrored that which occurred throughout the country. At the start of the 2020 AY, districts that began fully virtual accounted for approximately 60% of students nationally (Burbio, 2021; Smith et al., 2020). As the academic year progressed, those districts and schools that began fully virtual transitioned into offering options that included providing students the choice to remain fully virtual or offering students the opportunity to return to in-person learning in either hybrid or full five-day/week models (Burbio, 2021; U.S. Department of Education, 2021; American Enterprise Institute, 2021). It is important to note, that as districts added in-person learning options, the vast majority of those districts did not remove a fully virtual option for families (U.S. Department of Education, 2021).

As districts prepared to open in the fall of 2020, and there was mixed evidence regarding the extent to which schools contributed to community transmission, the Centers for Disease Control and Prevention provided guidance to mitigate the risk of COVID-19 transmission within schools (Centers for Disease Control and Prevention, 2020). One of the significant contributors to how LEAs determined learning options for students was the CDC recommendation to maintain between 3 feet to 6 feet of distance for unvaccinated individuals (Centers for Disease Control and Prevention, 2021). Whereas some regions of the country elected to not utilize mandates for distancing, in the state of Delaware and in the surrounding region, states followed CDC guidelines by providing specific guidelines and/or mandates for schools (Office of the Governor, 2020; Education Week, 2021). In July 2020, the DDOE provided a "green/yellow/red" framework that aligned with severity of COVID-19 community transmission and provided guidelines for when schools could fully open, use a hybrid model, or provide virtual learning only (Delaware Department of Education, 2020). There were additional recommendations for social distancing, masking, and a mandate limiting the number of students on buses. Districts followed the guidance and adapted instructional models and plans accordingly.

METHOD

To understand student instructional settings at the individual level, the Delaware DDOE provided student data through eSchool student information system for the AY ending in 2019,

2020, and 2021. The data identified the type of learning (in-person/virtual/hybrid) in which the student was engaged.

As it was understood that LEAs approached hybrid and virtual instruction in a variety of ways and to seek to understand the diversity of instructional approaches, from May to July 2021, data were collected for the Opportunities to Learn (OTL) survey. The OTL survey was sent to a total of 42 LEAs across the state of Delaware. LEAs were asked to complete the survey by online form, email, or phone, with at least three contact attempts made for non-responses. LEAs uploaded documentation describing their hybrid and virtual instruction for the 2021 academic year. Additionally, LEAs were asked to provide an open-ended response to the following two questions: (1) "What did remote and hybrid instruction look like in your school(s) during the 2020–21 school year? and (2) How did they differ across grade levels?"

Of the 42 LEAs asked to participate in the OTL survey, 32 submitted responses (16 District, 16 Charter) and 10 LEAs had no responses (response rate = 76.2%). Table 1 shows the distribution of the grade levels served by the 32 LEAs that participated in the OTL survey. For the purposes of this report, elementary is defined as serving grades kindergarten through fifth grade (K-5) and secondary is defined as serving any level from sixth to 12th grades (6-12).

Table 1: Distribution of LEAs by Grade Levels Served (*n*=32)

Grade levels served	K–5	K–8	K–10	K–12	6–12	7–12	8–12	9–12	Total
# of LEAs	1	5	1	18	1	1	1	4	**32**
% of LEAs	3.1%	15.6%	3.1%	56.3%	3.1%	3.1%	3.1%	12.5%	**100%**

Table 2 shows the distribution of LEAs by elementary and secondary levels served. Among 32 LEAs that completed the survey and provided supplemental information on instructional models, there was one elementary-only level LEA (serving only Grades K–5), seven secondary-only LEAs (serving only Grades 6+), and 24 LEAs serving both elementary and secondary levels (Grades K–6+). Combined together, 24 of the 32 LEAs serve elementary grade levels, and 31 of the 32 LEAs serve secondary level grades.

Table 2: Distribution of LEAs by Elementary and Secondary Levels Served

Grade levels served	Elementary only (K–5 only)	Secondary only (Grades 6+)	Elementary and Secondary (Grades K–6+)	Total
Number of LEAs	1	7	24	**32**

A team of two researchers, out of the larger six-person team, analyzed the documentation and short answer responses that were provided by LEAs. The researchers worked independently to record analytic notes of each LEA's operational definitions and descriptions of learning modalities, as well as changes to learning modalities offered over time. A collaborative inductive process was then used to develop categories and establish themes, as well as further record and categorize data. Credibility of this research was established through investigator triangulation where two researchers were involved in the documentation, analyses, and interpretation. Due to time constraints, member checks were not able to be conducted with LEAs to confirm content analysis accuracy. There were also instances where missing information made it difficult to confirm exact dates of changes to instructional modalities. However, great care was taken to confirm accurate interpretation by use of multiple sources of documentation and web searches when needed.

FINDINGS

The onset of the COVID pandemic required school districts to adapt instruction to local safety protocols. The following terms and corresponding definitions will be used to describe the various learning modalities that occurred throughout the state of Delaware during the 2021 academic year. In cases where districts applied like terms to describe different types of learning, we used district documents to gain insight into how each term was operationalized. For the purposes of this report, we utilized the most commonly used definitions by Delaware schools and districts (Table 3).

Table 3: Definitions of Learning Types

Virtual (VR)	LEAs used the terms "virtual", "remote" or "distance learning" as interchangeable labels to describe learning that occurs when students are not physically present in school and use a laptop, Chromebook, computer, or other personal device to access instruction. This report will utilize the term "virtual" to describe this learning modality. Virtual instruction can be "asynchronous" or "synchronous."
Hybrid (HYB)	A schedule in which students are assigned some days to attend school in-person and some days to attend school virtually. The groups to which students are assigned are typically referred to as "cohorts."
In-Person (IP)	Traditional instruction in which students physically attend school and receive instruction by teachers in a classroom-like setting.
Fully In-Person (FIP)	5 days a week traditional instruction in which students physically attend school and receive instruction by teachers in a classroom-like setting, with no virtual instruction.
Roomer/Zoomer	A learning modality in which virtual students "Zoom" into a physical school classroom where a teacher and other students are physically present. The teacher provides instruction to both virtual and physically present students at the same time. A web-based camera captures the in-

	person instruction, for the virtual student to view at home. Students physically present in the classroom are called "roomers" and students who are virtually Zooming into the classroom are called "Zoomers."
Asynchronous	Learning tasks that are completed independently without "live", real-time student-staff or student-student interaction.
Synchronous	Learning that occurs with a "live," real-time teacher at a specified time during which students interact with other students and school staff. LEAs sometimes referred to as "face-to-face," however, for the purposes of this report we will utilize the term "synchronous."

FINDING #1: IN-PERSON LEARNING, ONCE THE NORM, DECREASES SIGNFICANTLY

To understand the number of days each student (assigned or received instruction) spent in each instructional mode over past three years, eSchoolData was analyzed by way of three categories: (1) fully in-person (FIP), (2) virtual (VR), and (3) hybrid (HYB). Table 4 summarizes the available instruction mode data for students included in the unit counts for the past three years. In AY 19 and AY 20, 99% of students experienced FIP instruction. In stark contrast, only 13% of students experience FIP instruction in AY 21.

Table 4: Instructional Mode for Students for AY 19, 20, and 21

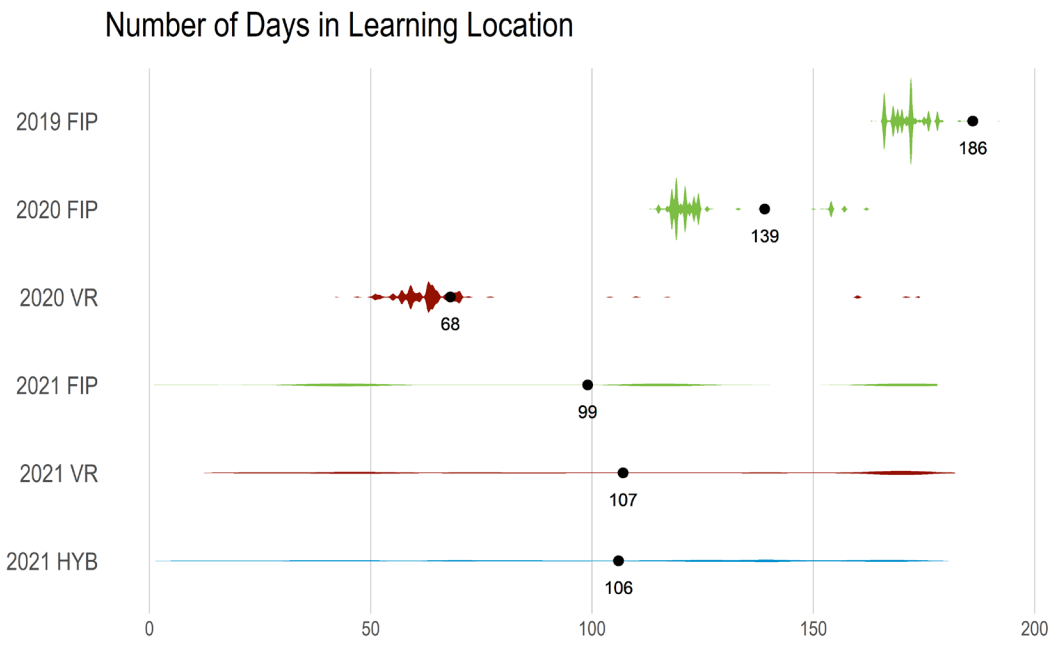
AY	Total # of Students	Mode	Students in Mode	Percent of Enrollments	Min	Max	Median	Mean	SD
2019	139144	FIP	138292	99%	163	516	172	186	63
2020	140849	FIP	139850	99%	113	468	121	139	62
		VR	139850	99%	42	223	63	68	27
2021	138408	FIP	18621	13%	1	219	115	99	55
		VR	98077	71%	1	309	109	107	56
		HYB	73918	53%	1	283	121	106	48

The onset of COVID during AY 20 required VR instruction for all students. On average, the number of FIP instruction days dropped by 48 days due to the onset of COVID. During the 2020–21 school year, among the students who experienced FIP instruction, there was a wide variation in the number of days of FIP instruction received, with a mean of 99 days (*SD*=55). The post-COVID (AY 21) mean number of days of FIP instruction was roughly half the pre-COVID (AY 19) mean. As noted in the learning type definitions, for the purposes of this report, we refer to FIP instruction as student's assigned enrollment being five days/week, and HYB instruction as a student's assignment enrollment rotating between both IP and VR instruction.

FINDING #2: THE 2020–21 SCHOOL YEAR INTRODUCED A GREAT DEAL OF VARIETY TO THE TYPE OF INSTRUCTION A DELAWARE STUDENT RECEIVED

While the emergence of COVID-19 during the spring of 2020 is often thought of as a time when education type was upended, we find that instruction types remained consistent across students until the 2020–21 school year. This is illustrated below in Figure 9.

Figure 9: Distribution of Days Per Instructional Mode



This violin graph illustrates the distribution of the number of days per instructional mode for each academic year. AY 20 introduced the widespread use VR instruction as a type of student enrollment, and AY 21 introduced the use of the HYB instructional mode. During AY 19, most students received more than 150 days of FIP instruction. AY 20 was most similar to AY19, however, the majority of students received less FIP instruction along with an additional VR instruction to complete the school year after COVID-19 emerged in Delaware. During AY 21, the distributions are dramatically different. The flat distributions suggest it is incredibly difficult to quantify the number of days a typical Delaware student received of each instructional mode. In other words, it is nearly impossible to summarize the number of days a typical student spent in each instructional type, as there is a large variation in days attended within the three instructional types.

FINDING #3: DISTRICTS UTILIZED COMMON APPROACHES TO A HYBRID MODEL

To achieve social distancing, IP instruction across Delaware largely operated under a hybrid model where students attended school in-person anywhere from two to four days a week. The most common approach to a hybrid approach included utilizing two cohorts typically referred to as "Cohort A" and "Cohort B." In the two-cohort model, an often selected schedule for a Monday through Friday week included an AABB schedule where "Cohort A" attended school in- person two days a week (e.g., Monday and Tuesday) and "Cohort B" attended school two days a week (e.g., Thursday and Friday.) In this model, there was one "all virtual" day per week (usually Wednesdays) for school cleaning and sanitation. Over 75% of the LEAs responding, had an AABB schedule in use for at least one level (elementary or secondary) at some point in the 2020–2021 year.

Other models included both cohorts attending several days a week, with Cohort A attending in the morning and Cohort B attending in the afternoon. Where schools could not sufficiently distance with a two-cohort model, they included the use of three or four cohorts. This was most often utilized at the high school level. In this model students attended school between one to two days a week. In one instance, an LEA selected an AAAA, BBBB model with cohorts attending school Monday through Thursday every other week.

FINDING #4: VIRTUAL LEARNING CONSISTED OF ASYNCHRONOUS AND SYNCHRONOUS INSTRUCTION

VR instruction ranged from providing students four days/week of fully synchronous instruction, to the most commonly used virtual approach which consisted of daily synchronous and asynchronous instructional blocks. In some districts, synchronous instruction was provided by way of a teacher focused solely on virtual learners. In other districts, virtual learners were considered "roomers" and their synchronous blocks of instruction consisted of "Zooming" into a classroom by use of a web-based classroom camera. In this model the teacher taught both in person and virtual learners at the same time. Some examples of virtual synchronous learning included: listening to a teacher deliver a mini-lesson, asking and answering questions, receiving verbal feedback, and working on assigned tasks in breakout rooms with peers or small groups with staff.

Asynchronous instruction included learning tasks that were assigned and expected to be completed by a designated date and time. Some examples of virtual asynchronous learning tasks included: watching recorded instructional videos, independently completing homework, or working on paced virtual learning programs (e.g., Khan Academy, Dreambox, etc.).

FINDING #5: MANY DISTRICTS USED A "VIRTUAL WEDNESDAYS" MODEL

Almost all surveyed LEAs utilized one day a week for an all student, fully virtual day. With just a few exceptions, LEAs selected Wednesday for this day, as it fell in between the commonly used AA/BB (MT/RF) cohort model structure. LEAs used a variety of terms for this day, with some referring to it as an "anchor day." According to LEAs, virtual Wednesdays (or other "anchor day") served a variety of purposes, including deep cleaning of schools, providing teachers needed planning and grading time, allowing full class synchronous instruction without teacher attention divided between in-person and virtual learners, and enabling schools the option to offer small group instruction for struggling students (students were assigned or self-selected for extra support). The majority of LEAs surveyed (60%) utilized a mix of scheduled synchronous and asynchronous learning blocks on these days.

FINDING #6: LEAS PRIORITIZED IN-PERSON INSTRUCTION FOR STUDENTS WITH SPECIAL NEEDS, ENGLISH LEARNERS OR SPECIAL CIRCUMSTANCES

Some LEAs noted that they prioritized the return of IP instruction for students with special or complex needs, ELs or circumstances such as student network connectivity issues. This consisted of providing additional days each week for IP instruction, or bringing these students back for HYB instruction before hybrid was made available to other peers in their grade. Of those surveyed, 37.5% of LEAs made specific mention of this special priority. However, this percentage should be interpreted with caution, as some LEAs may have provided extra IP instruction but did not mention it in their answers to our survey.

FINDING #7: LEAS LARGELY BEGAN THE YEAR VIRTUALLY FOLLOWED BY TRANSITION TO A HYBRID MODEL

The majority of LEAs (68.8%) began the school year with a fully virtual start. This was in line with nationally available data that estimates that across the county 60% of students began the year fully virtual (Burbio, 2021; Smith et al., 2020). The next most utilized instructional offering included a virtual option for families and a hybrid option for selected grades (28.1%). There was only one LEA that offered a fully in-person option (attending school in-person full-time, five days/week) for elementary students at the start of the school year. Table 5 shows the distribution of LEAs at the start of the 2020–2021 AY.

Table 5: Instructional Models Offered by LEAs at the Start of the 2020–2021 School Year (Aug/Sept 2020) (*n*=32)

Virtual only	Virtual and hybrid for some grade levels	Virtual, hybrid for some grade levels, and fully in-person for some grade levels
22 (68.8%)	9 (28.1%)	1 (3.1%)

As more LEAs transitioned to offering hybrid learning options, they also retained virtual options for families who did not feel comfortable sending children to school or could not do so. Of the 71.9% of LEAs that began implementing hybrid by November 2020 (see Table 6), most used a "rolling start" where hybrid offerings were put in place by grade level, beginning with elementary grades, then progressively adding secondary grades. Table 6 shows that as of November 2020, many LEAs had transitioned to offering HYB instruction (72.9%), with only 28.1% of LEAs continuing to operate with only a virtual option available. This compares to 68.8% of LEAs that had started off the 2020–2021 school year using a fully virtual model.

Table 6: Instructional Models Offered by LEAs by November 2020 (*n*=32)

Virtual only	Virtual and hybrid elementary and/or secondary	Virtual and hybrid elementary and/or secondary and fully in-person for some grade levels
9 (28.1%)	22 (68.8%)	1 (3.1%)

On December 3, 2020, due to rising COVID-19 cases, Delaware's Governor Carney recommended that LEAs transition to virtual learning beginning on Monday, December 14, 2020 through Friday, January 8, 2021 (Office of the Governor, 2020). Analyses of documents submitted by LEAs showed that most, if not all, LEAs adhered to this guidance and initiated full VR instruction on December 3, 2020. Several LEAs also remained closed throughout the entirety of January 2020, citing precautionary measures. Table 7 shows that by February 2021, most LEAs reopened for some in-person learning, with 87.5% LEAs combined offering a combination of virtual, hybrid, or fully in-person modalities. The number of LEAs remaining fully virtual decreased to 12.5% (from 28.1% of LEAs in November 2020), and one additional LEA (two total) offered FIP instruction for some grade levels.

Table 7: Instructional Models Offered by LEAs by February 2021 (*n*=32)

Virtual only	Virtual and hybrid elementary and/or secondary	Virtual and hybrid elementary and/or secondary and fully in-person for some grade levels
4 (12.5%)	26 (81.2%)	2 (6.3%)

Beginning in March 2021, as vaccinations became more available to school staff and adults in community settings, LEAs began to offer more in-person learning opportunities. Several LEAs added in-person days each week to hybrid cohorts. For example, one LEA gave students the option to return to school four days/week as long as parents could provide transportation on non-cohort days. Others offered additional classes for students who needed extra help (assigned or self-selected). Those LEAS who did not increase in-person instructional days cited the lack of physical space in classrooms and on buses as barriers. Specifically, until May 21, 2021 buses were capped at a limit of 23 students (Office of the Governor, 2021). This reduced the capacity of districts to bring in more students for FIP instruction five days/week. Table 8 shows that by May 2021, all LEAs had transitioned into offering a combination of virtual, hybrid, or fully in-person modalities. By May 2021, no schools only had a virtual option available (vs. 68.8% of LEAs operating virtual-only instruction at the beginning of the 2020–2021 school year). Of those 46.9% LEAs with increased or fully in-person days, 25% specifically mentioned they were offering four days/week of in-person learning.

Table 8: Instructional Models Offered by LEAs by May 2021 (*n*=32)

Virtual only	Virtual and hybrid elementary and/or secondary	Virtual and hybrid elementary and/or secondary, with increased in-person days since Feb. 2021	Virtual and hybrid elementary and/or secondary and fully in-person for some grade levels
0 (0%)	17 (53.1%)	13 (40.6%)	2 (6.3%)

Comparatively, a national study conducted by the Institute of Education Sciences (IES) of 5,000 public schools serving fourth and eighth graders estimated that by May 2021, 80% of public schools nationwide offered a virtual option to all students (U.S. Department of Education, 2021). In

Delaware specifically, the IES study found that 90% of districts offered a virtual option to all fourth graders and 97% offered a virtual option to all eighth graders (U.S. Department of Education, 2021). In our sample, 100% of Delaware LEAs offered virtual as an option to all students. The IES study also found that 83% of districts offered hybrid learning to fourth graders and 88% of districts offered hybrid to eighth graders (U.S. Department of Education, 2021). In our sample, 96.8% of Delaware LEAs offered the hybrid option to all students. Lastly, the IES study estimated that 67% of public schools offered FIP instruction five-days/week to some OR all students, while in our sample, only two schools or 6.3% offered this option to some or all students (U.S. Department of Education, 2021).

CONCLUSIONS

During the 2020–2021 school year, the vast majority of Delaware students attended school either fully virtual or under a hybrid model. Among LEA districts and charters surveyed, only two offered a five-day fully in-person learning option for all grade levels. As Tables 3 to 6 show, LEAs in Delaware adapted and evolved extensively over the course of the 2020–2021 school year. What began as a mostly virtual school year, developed into mostly hybrid learning by November 2020, even more hybrid instructional offerings by February 2021, and finally by May 2021, a transition to all schools offering hybrid learning, and about half of LEAs (46.9%) offering hybrid with increased in-person days or fully in-person learning.

QUESTION 3: WHAT POLICIES OR PRACTICES CHANGED AS A RESULT OF COVID-19?

BACKGROUND

As a result of the pandemic, many students needed to attend school virtually for some portion of the 2020–21 school year. To adapt to this change, schools and districts had to implement new technology (hardware and software) or utilize existing technology in new format. Furthermore, the COVID-19 pandemic shutdowns of in-person operations and subsequent shifts to virtual learning forced states and school districts to re-define what it meant for students to be "in attendance." The changes that were made, however, were not uniform, with variation across and within states (Attendance Works, 2021). For instance, while most states required that daily attendance be taken, 20% left setting attendance guidance to local decision-makers, while two states did not provide any explicit direction for setting attendance policies. Table 9 categorizes states by the type of guidance provided to LEAs for documentation of student attendance.

Table 9: States' Attendance Guidance during the Pandemic: Results of Attendance Works 50-State Scan in 2020

Attendance guidance	Number of states	States
Maintain requirements that attendance be taken daily	31 (plus the District of Columbia)	AZ, CA, CO, CT, DC, HI, ID, IL, IN, IA, KY, LA, ME, MD, MA, MN, MS, NC, NJ, NM, NY, OK, OR, PA, SC, TN, TX, VA, VT, WA, WI, WV, and D.C.
Leave the decision about how and when to track attendance to local discretion	11	AL, AK, AR, **DE**, KS, MT, NE, NH, ND, RI, and SD
Require attendance be taken, but not daily	6	GA, MO, NV, OH, WY
Attendance expectations are not explicitly addressed in available guidance	2	FL and UT

Source: Are Students Present and Accounted For? (Attendance Works, 2021)

According to the Attendance Works report, Delaware was listed as one of the states that gave local leaders discretion over how to track attendance.

METHOD

From May to July 2021, data concerning technology and changes to attendance policies were collected for the OTL survey. The OTL survey was sent to a total of 42 LEAs across the state of

Delaware. LEAs were asked to complete the survey by online form, email, or phone, with at least 3 contact attempts made for non-responses.

To answer research question #3, LEAs were asked to provide information regarding the computer hardware or devices that were provided to support the virtual learning and the digital learning platforms or software that was used. Additionally, LEAs were asked to submit attendance materials that were developed in response to pandemic-related shutdowns. For both the technology- and attendance-related questions, LEAs submitted these materials via Google Forms or emailed them to a CRESP staff member. In rare cases, a member of CRESP staff spoke directly to an LEA leader about the district's or charter school's approach to attendance. Of the 42 LEAS asked to participate in the survey, 30 LEAS (16 District and 14 Charter) provided materials detailing their attendance policies, and 32 LEAS (16 District and 16 Charter) provided materials related to technology.

A CRESP staff member read the materials and assessed how educators determined that a student was "in-attendance" for virtual and hybrid schooling or what type of technology was provided. When the in-attendance policy was found, a brief summary of the policy was entered in an excel sheet next to the LEA's name. Once all the summaries were entered, CRESP staff then read through all of the summaries and developed codes based on emerging themes. These codes were then applied to the LEAs based on their summaries. Codes related to attendance and their definitions are below in Table 10.

Table 10: Codes Applied to LEAs' Attendance Policy Summaries

Code	Definition
Virtual presence	Summary mentions visual confirmation of student using virtual platform
Virtual presence and/or Assignments	Summary mentions visual confirmation of student using virtual platform AND student submission of assignments
Participation	Summary mentions submission assignments
Log in to LMS	Summary mentions log-in to a learning management system
Primary/Secondary level guidance	Summary provides guidelines for different grade levels

FINDINGS

The findings related to this section will be reported out separately, with one section focusing on the analysis of attendance materials and the other focusing on technology.

FINDING 1: TO DETERMINE THAT A STUDENT WAS IN ATTENDANCE, THE MAJORITY OF LEAS ACCEPTED A COMBINATION OF (1) VISUAL CONFIRMATION DURING SYNCHRONOUS CLASS AND/OR (2) ASYNCHRONOUS ASSIGNMENT SUBMISSIONS

We found that 27 of the 30 LEAs the sample (90%) determined that a teacher seeing a student via Zoom, Google Meet, or in-person during synchronous instruction, meant the student was marked "present." During asynchronous instruction, receiving some form of participation, such as assignments or Schoology log ins, was sufficient for attendance. In cases in which a student did not attend a Zoom session for synchronous instruction, districts would accept that student participating asynchronously by submitting an assignment.

For instance, one district stated:

> *During hybrid or virtual learning, a school day shall consist of daily synchronous (delivered same time) and/or asynchronous (not delivered same time) programming. Attendance may be based on a combination of everyday evidence of participation, completion and/or submission of assignments (in both synchronous and asynchronous settings) as determined by existing practices, and practices that may be announced.*

Another LEA stated only that they needed evidence of work on assignments when they held virtual schooling.

> *For the purpose of definition during the emergency closure due to COVID 19, attendance will be defined as: (1) Any student demonstrating the completion of lessons and materials live or virtually in his/her homeroom class.*

Another LEA, which only had synchronous learning, stated that visual confirmation over Zoom was sufficient for a student to be marked present.

A few districts monitored participation on learning management systems to track attendance. Specifically, six districts stated that students must log into Schoology, Imagine Learning, or another learning management system to be considered present.

Some LEAs provided guidance by grade level. We found that 11 LEAs in our sample outlined how and when attendance would be tracked for elementary grades versus middle and high school grades. Often the key difference was that elementary attendance was taken daily, while middle and high school attendance was taken during each period. Three LEAs had procedures for contacting middle and/or high school students' parents if they were absent during virtual learning.

FINDING 2: A VARIETY OF SOFTWARE AND HARDWARE WAS USED BY THE LEAS TO SUPPORT VIRTUAL LEARNING, BUT COMMONALITIES WERE PREVALENT

Table 11 displays the various hardware and devices that were distributed to the students. Most LEAs (21; 62%) provided students with only Chromebooks. A few LEAS (6, 18%) provided

their students with either a Chromebook or iPad. Chromebooks, for the most part, were distributed to students in their upper grades (i.e., Grade 3 and above), whereas iPads were used for students in the earlier grades (i.e., Pre-K to 2) (6; 18%) or students who requested them. In LEAs that distributed Chromebooks and laptops, the Chromebooks were provided to students in the earlier grades, with laptops provided to students in their upper grades (4; 12%).

Table 11: Hardware and Devices Distributed to Students

Hardware/Device	***N***	**%**
Chromebooks only	21	61.8
iPads only	1	2.9
Laptops only	1	2.9
Chromebooks and iPads	6	17.6
Chromebooks and laptops	4	11.8
Chromebooks, iPads and laptops	1	2.9

Furthermore, LEAs indicated hotspots were provided to students who needed them. Also, classrooms were equipped with cameras and microphones to enable teaching hybrid, and virtual learning simultaneously. This type of technology was prevalent in LEAs enacting a roomer/Zoomer model of instruction. Cameras installed in classrooms allowed teachers to be seen and heard by students who were learning virtually. It also allowed the teacher to move around the classroom to utilize and display instructional materials (i.e., SMART Board) to students.

Lastly, CRESP determined there were 46 different learning platforms/software (Table 12) used by districts and schools to assist with learning. For the most part Zoom, or Microsoft Teams were used by districts and schools for virtual instruction. The majority of LEAs used Schoology and Google Classroom to manage student assignments. Finally, applications such as ClassDojo, Clever and Remind were used to communicate with parents/guardians.

Table 12. List of Learning Platforms and Software Used

Achieve 3000	**Flipgrid**	**Otus**
APEX	**Flocabulary**	**Peardeck**
APL classroom	**Gimkit**	**Quaver music**
Brain Pop	**Gizmos**	**Quizlet**
Cengage	**Google Classroom**	**Remind**
ClassDojo	**Health smart**	**Renaissance**
Classkick	**iReady**	**Rozzy**
Clever	**Kahoot**	**Schoology**
Delta Math	**Learn Zillion**	**Seesaw**
Desmos	**McGraw-hill suite**	**SmartyAnts**
Dreambox	**Microsoft Teams**	**SOAR**
Duolingo	**NCCER**	**Spark**
Edcite	**Nearpod**	**Thinkboards**
Edgenuity	**Newsela**	**Turnitin**
EdPuzzle	**NoReadLink**	**Zoom**
Extempore	**ONEder**	

CONCLUSIONS

During the 2020–21 AY LEAs implemented new technology, including hardware and software, to support student learning and re-defined what it meant for students to be "in attendance." Unlike other states across the country which mandated daily attendance, Delaware officials gave local LEA leaders discretion over how to track attendance. While the vast majority (90%) of LEAs in the sample counted a student "present" for attendance during synchronous instruction if a teacher saw a student via Zoom, Google Meet, or in-person, during asynchronous instruction, assignments or Schoology log ins, was sufficient for attendance. To adapt to the use of virtual instruction, LEAs mostly distributed Chromebooks to students, with some LEAs also distributing iPads and/or laptops. While over 46 different learning platforms were noted as being used, LEAs primarily relied on Zoom, or Microsoft for virtual instruction, Schoology and Google Classroom to manage student assignments, and applications such as ClassDojo, Clever and Remind to communicate with parents/guardians.

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