Original Paper

The State of American Education during the Covid-19 Pandemic: Survey of American Public, Private, and Charter School Teachers

Holim Song[1] & Emiel W. Owens[2]

[1] Professor, College of Education, Texas Southern University, Houston, TX 77007, USA

[2] Professor, College of Education, Texas Southern University, Houston, TX 77004, USA

Abstract

The purpose of the present study was to examine how teachers and students are adjusting to the new online platform, the frequency and significance of connectivity problems and how teachers believe their students' education quality is. An electronic link to a Qualtrics survey was sent to participants and a snowball sampling procedure (Handcock & Gile, 2011) was used. The online survey was open for 4 weeks and a total of 165 teachers representing 22 states across the U.S. In general, a large percent of students across the country do not have stable or any internet services in their home. Furthermore, even for those that have internet access, connectivity issues caused problems for the entire class. New teachers in their first five years are less likely to offer alternatives when internet was not available and more likely changed their curriculum due to internet access issues.

Keywords

Online instructions, Internet, Connectivity problems, Teacher Education

1. Introduction

Schools around the country have closed temporarily due to the COVID-19 pandemic. It may be necessary for school closure in an attempt to contain the spread of the virus. These nationwide school closures are impacting the majority of student population in terms of learning opportunity. The digital divide between students has become apparent as schools have increasingly moved to remote learning. Some students are accessible to technology resources to learn remotely, but others lack internet connectivity or a computer. According to a paper by the Opportunity Insights (Chetty et al., 2020), low-income students who participated in online math classes per week plunged by 62%, while students

from high-income households were down 21% since the pandemic. The number of lessons completed by low-income students were down to 52%, while high-income students completed 14% more lessons in a given week. While low-income students are lacking internet and technology resource to complete their homework online, it seems that the gap between low and high income household are widening. These gaps during the COVID-19 crisis affect students' learning opportunity especially for low-income students than affluent student. Twenty-first century learning absolutely requires technology and internet. In order to provide equal opportunity to learn regardless their household income status, students should have the technology they need to learn outside of school.

In the following, new dataset from surveys of American teachers is presented. This survey focused on the effects of internet access on education. We consider how teachers and students are adjusting to the new online platform, the frequency and significance of connectivity problems, and how teachers believe their students' education quality is. This dataset is a significant step in understanding the importance of having stable internet access during the current educational situation. It is important that we be able to understand how common and serious such effects are and continue to be.

2. Method

An online survey was developed to gather information on the effects of internet access on the state of teachers' online instruction during the Covid-19 pandemic, incorporating the following areas: student participation, class disruptions, connectivity issues, curriculum changes, and other challenges. Data collection was done through the use of a Qualtrics online survey software and Excel. An electronic link to a Qualtrics survey was sent to participants and a snowball sampling procedure (Handcock & Gile, 2011) was used. In this case survey respondents were encouraged to forward the survey link to colleagues. The online survey was open for 4 weeks. The survey included 23 questions and was designed to be brief, increasing the likelihood of respondents (Fan & Yan, 2010). Wherever possible, the survey included follow-up questions with qualitative feedback which can be found in the appendix. The truthfulness of participants may affect validity, but anonymity mitigates that. Participation was completely voluntary; we did not offer survey participants any form of compensation. All completed surveys were included in the study. A total of 165 surveys were included in the analysis representing 22 states across the U.S...

3. Results

Table 1 reports the descriptive results of the survey. The first set of questions provide descriptive of the sample. The first question reports the distributions of teachers and the states they represent. In this case Texas followed by Iowa had the largest sampling of teachers to participate in the survey. For the state of Massachusetts, 17 teachers participated in the survey. The second item divides the states into regions of the country. North East represents states such as New York, Massachusetts and Pennsylvania. North

Central states are represented by states such as Michigan, Ohio, and Wisconsin. Southern states were Texas, South Carolina, and Alabama just to name a few. Finally, Western states were represented by states such as California, Alaska, and Colorado. Item three on the survey ask the teacher to indicate the school setting they teach in. In this case, school settings were public, private, or charter school. The results indicated that the majority of teachers worked in a public-school setting. The next two items ask the teachers to indicate the number of years they had been in the teaching profession. The minimal was one year and the maximum number of years was Forty-two years. When years of teaching experience were categorized, the majority of teachers had been teaching between 11 and 20 years. In this case, almost 30% of the teachers had taught school between 11 and 20 years.

Table 1. Overall Descriptive Data Sample

Survey Question	State	Frequency	Percent
What state do you live in?	Alabama	1	0.7
	Alaska	1	0.7
	California	6	4.0
	Colorado	2	1.3
	District of Columbia	1	0.7
	Iowa	30	20.0
	Massachusetts	17	11.3
	Michigan	3	2.0
	Mississippi	3	2.0
	Nebraska	1	0.7
	New York	4	2.7
	North Carolina	1	0.7
	Ohio	4	2.7
	Oklahoma	2	1.3
	Oregon	1	0.7
	Pennsylvania	3	2.0
	South Carolina	1	0.7
	Tennessee	1	0.7
	Texas	64	42.7
	Utah	1	0.7
	Washington	2	1.7
	Wisconsin	1	0.7
Region of the Country	North East	26	17.3
	North Central	41	27.3

	South		70	46.7
	West		13	8.7
What type of school do you teach at?	Charter		9	5.5
	Private		25	15.2
	Public		128	77.6
	Other		3	1.8
How long have you been teaching?	Min	Max	Mean	SD
	1	42	15.2	10.4
Years of Teaching Experience	Years		Frequency	Percent
	1-5		34	21.1
	6-10		34	21.1
	11-20		46	28.6
	21-30		30	18.6
	31+		17	10.6

Note. N=165.

The second set of questions (Table 2) are related to the impact of Covid-19 on student outcomes and internet issues associated with online instructions. The first item asked teachers if they felt their students were doing better or worse now that classes are online? More than two-thirds (about 70%) felt their students was doing somewhat worse or much worse in their class now that classes were being taught online. Roughly 20% of the teachers indicated that their students were performing about the same. The next item asked teachers if they had access to internet at home? Most of the teachers (approximately 93%) indicated that they do have internet at home. When asked what percent of students at their school had internet at home, the majority of the teachers (54.7%) indicated between 0 to 20%. About one-fourth (25%) of the teachers indicated that between 21 to 50 percent of their students had internet at home. It should be noted that only about 10 percent of teachers thought that between 76 to 100 percent of their students had internet at home.

Associated with the previous question; teachers were asked if they or their students were having internet connectivity issues. About 50 percent of the teachers indicated that connectivity issues do occur sometimes. About one-third of the teachers reported connectivity issues occurred either half of the time or most of the times. Next, teachers were asked if students were offered an alternative if stable internet access was not available? About 70 percent of the teachers said "Yes" and the remaining 30 percent said "No".

Table 2. Overall Descriptive Data Sample-Student Outcomes and Internet Issues

Questions	Impact	Frequency	Percent
Are your students doing better or worse now that class is online?	Much Better	3	1.8
	Somewhat Better	10	6.1
	About the Same	36	21.8
	Somewhat Worse	77	46.7
	Much Worse	39	23.6
Do you have access to the internet at your home?	Yes	152	92.7
	Yes, but Unstable	11	6.7
	No	1	0.6
What percentage of students in your school do you estimate do not have a stable or any internet connection at home?	0-20%	88	54.7
	21-50%	40	24.8
	51-75%	16	9.9
	76-100%	17	10.6
Does dealing with internet connectivity issues, on either the teacher's or student's end, cause significant problems for the entire class?	Never	19	11.5
	Sometimes	83	50.3
	Half of the times	24	14.5
	Most of the times	28	17.0
	Always	11	6.7
Have you or your students been offered alternatives if stable internet access was not available?	Yes	115	70.6
	No	48	29.4

Note. N=165.

The next set of items (Table 3) are related to curriculum issues associated with Covid-19. The first item asked teachers if they had changed their curriculum due to classes being online. About 60 percent of the teachers indicated they had and the remaining 40 percent said they had not. When asked if they were holding their class live, about 60 percent said "yes"; the remaining 40 percent said they did not hold live classes. Teachers were then asked if they had lost contact with any of their students; 72 percent said they had. Next teachers were asked if their students were able to follow along while at home, the majority (41.8%) said they might or might not. Approximately 30 percent of the teachers indicated that students were either "probably not" or "definitely not" following them at home. The final item related to curriculum issues asked if teachers felt that their students have problems engaging with class materials because of internet connectivity issues. Nearly 57 percent of the teachers indicated they believed their students were having problems engaging with class materials.

Table 3. Overall Descriptive Data Sample-Curriculum Issues

Questions	Impact	Frequency	Percent
Have you changed your curriculum due to internet access issues?	Yes	96	58.2
	No	69	41.8
Are you holding class sessions live (i.e., no recorded)?	Yes	98	59.4
	No	67	40.6
Have you lost contact with any of your students because of school closures?	Yes	118	72.0
	No	46	28.0
Do you feel like your students are following along while at home?	Definitely Not	20	2.1
	Probably Not	31	18.8
	Might or Might Not	69	41.8
	Probably Yes	35	21.2
	Definitely Yes	10	6.1
Do students have problems engaging with class materials (class meetings, materials, etc.) because of internet connectivity issues?	Yes	94	57.0
	No	71	43.0

Note. N=165.

The final set of questions (Table 4) were associated with students' access to internet services and laptops through the school they attend. The first question asked teachers if they believe it is equal rights issue that should require schools to provide internet services to all students. Only about one-fourth (24%) believed that student access to internet services is an equal rights issue. The remaining 76 percent indicated that student access to internet services was not an equal rights issue. Teachers were then asked if they believed public internet access will improve student participation; almost 70 percent said "yes". When asked should schools provide internet access to students, around 42 percent said "yes" if students cannot afford it. Thirty seven percent of the teachers indicated that all students should be provided internet through the school. The final question asked if schools should provide laptops to students; 60 percent said that schools should provide laptops to all students. Thirty percent of the teachers indicated that schools should provide laptops if students cannot afford them.

Table 4. Overall Descriptive Data Sample-Access to Internet Services

Questions	Impact	Frequency	Percent
In Brown v The Board of Education, the Court described an education as "a right which must be made available to all on equal terms." Do you believe your school isn't providing internet access to your students?	Yes	35	24.0
	No	111	76.0
Do you believe public internet access will improve student participation?	Yes	101	69.2
	No	45	30.8
Should schools provide internet access to students?	Yes, to all students	54	37.0
	Yes, if cannot afford	61	41.8
	No	31	21.2
Should schools provide laptops/tablets to students?	Yes, to all students	88	60.3
	Yes, if cannot afford	45	30.8
	No	13	8.9

Note. N=165.

Table 5 reports descriptive outcomes across regions of the country. When asked if students were doing better or worse, teachers from North Central and Western stated students tend to be doing either somewhat worse or much worse compared to other states. Teachers from North-East and Southern states tend to indicate more students were performing about the same. When comparing internet access, three of the four regions reported more than 90 percent have access to internet at home. The only region that reported less than 90 percent were teachers in North Central states. When asked what percentage of students in their schools did not have internet at home, teachers from North-East had the highest percentages. In this case, teachers from North-East schools estimate that about 80 percent of their students have 0 to 20 percent access to internet services at home. Teachers in North Central states report their students have the most access to internet. About one-fourth of their students (50% or greater) have access to internet at home. When asked about internet connectivity issues; teacher in the North East reported the fewest concerns. In this case, about one-fourth of the teachers from North East states reported not having any connectivity issues. Over 20 percent of the teachers in Southern, North Central, and Western states reported having connectivity issues either most of the time or always. When asked if students have been offered alternatives if stable internet access was not available, teachers from Southern and North-Central states were more likely to say yes. About 76 percent of Southern teachers and 85 percent of North-Central teachers reported they do provide alternatives to internet. Only about 46 percent of North-East teachers reported providing alternatives to internet.

Table 5. Descriptive Data by Region-Student Outcomes and Internet Issues

		North-East	South	North-Central	West
Are your students doing better or worse now that class is online?	Much Better	3.8%	1.4%	2.4%	0%
	Somewhat Better	15.4%	7.1%	2.4%	0%
	About the Same	38.8%	31.4%	7.3%	7.7%
	Somewhat Worse	26.9%	44.3%	48.8%	61.5%
	Much Worse	15.5%	15.7%	39.0%	30.8%
Do you have access to the internet at your home?	Yes	96.2%	94.3%	87.8%	92.3%
	Yes, but Unstable	3.8%	4.3%	9.8%	7.7%
	No	0%	0%	2.4%	0%
What percentage of students in your school do you estimate to not have a stable or any internet at home?	0-2%	79.2%	55.1%	50.0%	38.5%
	21-50%	8.3%	24.6%	27.5%	46.2%
	51-75%	8.3%	8.7%	15.0%	7.7%
	76-100%	4.2%	11.6%	7.5%	7.7%
Does dealing with internet connectivity issues on either the teacher's or student's end, cause significant problems for the entire class?	Never	23.1%	8.6%	7.3%	15.4%
	Sometimes	69.2%	54.4%	41.5%	38.5%
	Half of the time	7.7%	12.9%	19.5%	15.4%
	Most of the times	0%	18.6%	24.4%	23.1%
	Always	0%	8.6%	7.3%	7.7%
Have you or your students been offered alternatives if stable internet access was not available?	Yes	46.2%	75.7%	84.5%	61.5%
	No	50.0%	22.9%	14.6%	38.5%

Note. N=165.

When examining curriculum issues (Table 6), the first item asked teachers if they had to change their curriculum due to internet access? Teachers in the South had the highest percent; (64.3%) of teachers there indicated they did change their curriculum. Teachers in the Western states indicated the smallest percent (46.2%) of those teachers indicated they did change their curriculum due to internet access. When asked if they were holding class sessions live, teachers located in North-East schools reported the highest percent at about 82%. North-Central and Southern teachers reported the lowest percent at 51.2 and 54.3% respectively. The next item asked if teachers felt they had lost contact with any of their students, teachers from the North Central reported the highest percentage with about 93 percent saying "yes".

About 85 percent of the teachers from Western states also reported they had lost contact with some of their students. The lowest percent was teachers from North-East states with about 31 percent. The next item asked teachers whether they felt their students were following along while at home. Teachers from North East indicated the highest percentage in agreement. In this case about 65 percent of the North East teachers either said "probably yes" or "definitely yes" to their students being able to follow along while at home. About 30 percent of the teachers from Southern, North Central, and Western states indicated that their students were either probably not or definitely not following along while at home. The final question related to curriculum issues; teachers were asked if their students were having problems engaging with class materials because of internet connectivity issues, over 50 percent of the teachers from Southern, North Central and Western states said "yes". The lowest percentage were teachers from North East with only about 39 percent saying "yes".

Table 6. Descriptive Data by Region-Curriculum Issues

		North-East	South	North-Central	West
Have you changed your curriculum due to internet access issues?	Yes	50.0%	64.3%	58.5%	46.2%
	No	50.0%	35.7%	41.5%	53.8%
Are you holding class sessions live (i.e., not recorded?	Yes	80.08%	54.3%	51.2%	61.5%
	No	19.2%	45.7%	48.8%	38.5%
Have you lost contact with any of your students because of school closures?	Yes	30.8%	68.6%	92.7%	84.6%
	No	69.2%	31.4%	7.3%	7.7%
Do you feel like your students are following along while at home?	Definitely Not	7.7%	12.9%	9.8%	7.7%
	Probably Not	7.7%	21.4%	24.4%	23.1%
	Might or Might	19.2%	37.1%	56.1%	53.8%
	Not	42.3%	27.1%	7.3%	15.4%
	Probably Yes	23.1%	1.4%	2.4%	0%
	Definitely Yes				
Do students have problems engaging with class materials (Class meeting, materials, etc.) because of internet connectivity issues?	Yes	38.5%	58.6%	58.5%	53.8%
	No	61.5%	41.4%	41.5%	46.2%

Note. N=165.

The final set of questions (Table 7) were associated with access to internet services. The first question asked if teachers felt equal rights are being violated if schools do not provide internet access to students. Approximately 30 percent of the teachers from Southern and Western states agreed it was an equal rights issue. About 85 percent of North East states teachers said no it was not equal rights. The next question asked teachers if they believed public internet access will improve student participation. Over two-thirds of the teacher from North East, Southern, and North Central states said "yes" to this statement. Nearly 62 percent of the Western state teachers agreed with this statement. When asked if schools should provide internet access to students, Western states teachers had the highest percent (46.2%) that indicated that internet access should be provided to all students. Teachers from North East states had the lowest percent (26.9%) of those teachers indicated that schools should provide internet to all students. Furthermore, 50 percent of the teachers from North East states indicated that the school should provide students internet if they cannot afford it. About 20 percent of teachers across North East, Southern, and North Central indicated No, schools should not be responsible for providing internet to their students. When asked if schools should provide their students with laptops, North Central teachers had the highest percent (73.2%) that said "yes", to all students. Teachers from North East states had the lowest percentage of teachers that agreed that school should provide laptops to all students.

However, North East teachers had the highest percentage of teachers that suggested schools should provide their students with laptops if they can't afford them. It should be pointed out; slightly over 20% of the teachers from Western states said "no", school should not provide laptops to their students.

Table 7. Descriptive Data by Region-Access to Internet Services

		North-East	South	North-Central	West
In Brown v The Board of Education, the Court described an education as "a right which must be made available to all on equal terms." Do you believe your school isn't providing internet access to your students?	Yes	15.4%	28.6%	17.1%	30.8%
	No	84.6%	65.7%	82.9%	69.2%
Do you believe public internet access will improve student participation?	Yes	69.2%	68.6%	65.9%	61.5%
	No	30.8%	25.7%	34.1%	38.5%
Should schools provide internet access to students?	Yes, to all	26.9%	37.1%	36.6%	46.2%
	Students	50.0%	37.1%	41.5%	38.5%
	Yes, if can't afford	23.1%	20.0%	22.0%	15.4%

	No				
Should schools provide	Yes, to all	38.5%	58.6%	73.2%	53.8%
laptops/tablets to students?	Students	53.8%	28.6%	19.5%	23.1%
	Yes, if can't afford	7.1%	7.1%	7.3%	23.1%
	No				

Note. N=165.

Table 8 looks at descriptive outcomes associated with student outcomes and internet issues, curriculum issues and access to internet services across teachers' years of teaching experience. Under student outcomes the first question asks if teachers believed their students were doing better or worse now that classes were online. Over 75 percent of the teachers with 6 to 10 years of teaching service believed their students were performing either somewhat worse or much worse academically since classes have been moved to online. Over 60 percent of the other teachers with 0 to 5, 11 to 20, 21 to 30 years of teaching experience, and teachers with 31 plus years believed that their students were doing somewhat worse or much worse since their students have moved to online classes. Finally, about one third of the teachers with 11 to 20 teaching experience believed that students were doing about the same since moving to an online platform. When asked if teachers had access to internet at home over 90 percent of all the teachers across all teaching experience levels said they did. When ask to estimate what percent of their students do not have stable internet of no internet at all, 0 to 20 percent received the highest percent. This was true across all levels of teaching experience categories. The percent of teachers indicating 0 to 20 of their students do not have stable internet of no internet at all range from 66.7 percent for teachers with 0 to 5 teaching experience to 40 percent for teachers with 31 plus years of experience. It should also be noted that one third of the teachers with 31 plus years of teaching experience indicated that between 76 to 100 percent or their students do not have stable internet of no internet at all. When ask if connectivity Issues causes significant problems for either teachers or students, majority of the teachers across all teaching experience levels indicated sometimes. Slightly more than 25 percent of the teachers with 31 plus years of experience indicated connectivity Issues causes significant problems either most of the times or always. When asked if an alternative to internet was being offered teachers with 11 to 20 and 21 to 30 reported the highest percent of 84.4 and 78.8 percent respectively. The lowest percent were for the groups 0 to 5 and 31 plus years of experience with 47.1 and 53.3 respectively.

Table 8. Descriptive Data by Years of Teaching Experience-Student Outcomes and Internet Issues

		Years of Teaching Experience				
		0-5	6-10	11-20	21-30	31+
Are your students doing better or worse now that class is online?	Much Better	0%	0%	0%	3.0%	6.7%
	Somewhat Better	8.8%	2.9%	2.2%	9.1%	13.3%
	About the Same	20.6%	17.6%	31.1%	21.2%	13.3%
	Somewhat Worse	32.4%	55.9%	51.1%	48.5%	40.0%
	Much Worse	38.2%	23.5%	15.6%	18.2%	26.7%
Do you have access to the internet your home?	Yes	91.2%	91.2%	95.6%	90.9%	93.3%
	Yes, but Stable	8.8%	8.8%	2.2%	9.1%	6.7%
	No	0%	0%	0%	0%	0%
What percentage of students in your school do you estimate to not have a stable or any internet connection at home?	0-20%	66.7%	42.4%	65.1%	54.5%	40.0%
	21-50%	21.2%	39.4%	16.3%	30.3%	13.3%
	51-75%	6.1%	9.1%	9.3%	9.1%	13.3%
	76-100%	6.1%	9.1%	9.3%	6.1%	33.3%
Does dealing with internet connectivity issues on either the teacher's significant problem for the entire class?	Never	17.6%	8.8%	13.3%	6.1%	13.3%
	Sometimes	50.0%	44.1%	51.1%	63.6%	40.0%
	Half of the times	11.8%	26.5%	8.9%	12.1%	20.0%
	Most of the times	14.7%	11.8%	26.7%	6.1%	13.3%
	Always	5.9%	8.8%	0%	12.1%	13.3%
Have you or your students been offered alternatives if internet access was not available?	Yes	47.1%	76.5%	84.4%	78.8%	53.3%
	No	52.9%	23.5%	11.1%	21.2%	46.7%

Note. N=165.

The next group of items (Table 9) addresses curriculum issues associated with the move to online classes. The first question in this section asked if teachers had changed their curriculum due to internet access issues. About two-thirds of the teachers in the 0 to 5 and 11-20 years of experience indicated they had. The lowest groups were teachers with 21 to 30 and 31+ years of teaching experience with percentages of 48.5 and 33.3 respectively. When asked if teachers were holding classes live, the largest group were teachers with 31+ years of experience, with 80 percent. The next highest percentage were teachers with 0 to 5 teaching years with about 62 percent saying "yes". The lowest group of teachers were those with 6 to 10, 11 to 20 and 21 to 30 teaching years, with percentages of 55.9, 57.8 and 51.5 respectively. When asked if teachers had lost contact with students because of school closures, teachers with 6 to 10 teaching

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years indicated the highest percentage at about 85 percent. The lowest percentage were teachers with 31+ years of teaching experience, with about 47 percent saying "yes". Teachers from 0 to 5 years and 11 to 20 years, indicated about 73 percent have lost contact with some of their students.

The next item asked was whether teachers felt their students were able to follow along while at home. Almost 45 percent of the teachers with 0 to 5 years of teaching experience indicated that their students were either "probably not" or "definitely not" able to follow along. It should be pointed out; roughly 40 percent of the teachers in the 21 to 30 and 31+ years indicated their students were either "probably yes" or "definitely yes" able to follow along at home. The next item asked whether teachers felt their students were having problems engaging with class materials because of internet issues. Teachers in the 31 + teaching year group had the lowest percent (46.7%) that responded "yes" to students having problems engaging with class materials. The group with the highest percent (65%) stating "yes", their students were having problems engaging with class materials were teachers with 6 to 10 years of teaching experience.   Approximately 60 percent of the teachers in the 0 to 5 and 21 to 30 teaching experience groups responded "yes" to this question.

Table 9. Descriptive Data by Years of Teaching Experience-Curriculum Issues

		Years of Teaching Experience				
		0-5	6-10	11-20	21-30	31+
Have you changed your curriculum due to internet access issue?	Yes	67.6%	61.8%	68.9%	48.5%	33.3%
	No	32.4%	38.2%	31.1%	51.5%	66.7%
Are you holding class sessions live (i.e., not recorded)?	Yes	61.8%	55.9%	57.8%	51.5%	80.0%
	No	38.2%	44.1%	42.2%	48.5%	20.0%
Have you lost contact with any of your students because of school closures?	Yes	73.5%	85.3%	73.3%	66.7%	46.7%
	No	26.5%	14.7%	26.7%	33.3%	53.3%
Do you feel like your students are following along while at home?	Definitely Not	23.5%	11.8%	4.4%	6.1%	20.0%
	Probably Not	20.6%	29.4%	17.8%	15.2%	6.7%
	Might or Might Not	38.2%	38.2%	53.3%	36.4%	33.3%
	Probably Yes	14.7%	20.3%	17.8%	36.4%	20.0%
	Definitely Yes	2.9%	0%	6.7%	6.1%	20.0%
Does students have problem engaging with class materials (Class meeting, materials, etc.) because of internet connectivity issues?	Yes	58.8%	64.7%	51.5%	60.6%	46.7%
	No	41.2%	35.3%	48.9%	39.4%	53.3%

Note. N=165.

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The last section (Table 10) looks at teachers' perception to student access to internet services. The first question asks teachers if they fill it an equal rights issue associated with student access to internet services. The highest percent of teachers that agreed with this statement were teacher with 0 to 5 years of experience.   In this case about 32 percent of this group said "yes". The next highest group of teachers that agreed with the statement was 31 plus teaching experience. About 29 percent said "yes" that this was an equal rights issue.

The group with the lowest percent was teachers in the 11 to 20 group. Seventeen percent of these teachers said "yes". The next item asks if teachers believe that public internet access will improve student participation. Three groups, 6 to 10, 11 to 20 and 31 plus responded "yes" at a rate of 70 percent or above. About two-thirds of the remaining group, 0 to 5 and 21 to 30 answered "yes" to this item. When asked if teachers believed that schools should provide internet access to students, the highest percent of teachers that said "yes" to all students were teachers in the 31 plus years of experience group. About 43 percent of these teachers agreed with this statement. The remaining four teaching experience groups agreed that schools should provide internet access to all students range from about 39 percent for the group 0 to 5, to 33.3 percent for the group 21 to 30. A large percent of the groups suggested that schools should provide internet access to student if they cannot afford it. The percentages range from a high of 50 percent for the 21 to 30 group, to about 36 percent for teachers in the 31 plus years of experience. Slightly more than 21 percent of 0 to 5, 6 to 10, 11-20 and 31 plus groups said "no" schools should not provide internet access to students.

The final question associated with access to internet services was should schools provide laptops or tables to students. Sixty nine percent of the teachers in the 6 to 10 group said "yes" schools should provide laptop/tables to all students. About 64 percent of the teachers in the 0 to 5 and 21 to 30 groups of teachers said "yes" schools should provide laptop/tables to all students. The lowest percent of teachers that agreed that schools should provide laptop/tables to all students were the group 31 plus. About 29 percent of the 31 plus group of teachers said "yes". It should be noted that the 31 plus group of teachers had the highest percent (42.9%) of teachers saying "yes", schools should provide laptop/tables to all students if they cannot afford to.   Furthermore, 31 plus group of teachers had the highest percent (28.5%) of teachers saying "no", schools should not provide laptop/tables to all students.

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Table 10. Descriptive Data by Years of Teaching Experience-Access to Internet Services

		Years of Teaching Experience				
		0-5	6-10	11-20	21-30	31+
In Brown v The Board of Education, the Court described an education as "a right which must be made available to all on equal terms." Do you believe your school isn't providing internet access to your students?	Yes	32.1%	26.0%	17.0%	23.3%	28.6%
	No	67.9%	74.0%	83.0%	76.7%	71.4%
Do you believe public internet access will improve student participation?	Yes	67.9%	70.0%	75.6%	66.7%	71.4%
	No	32.1%	30.0%	24.4%	33.3%	28.6%
Should schools provide internet access to students?	Yes, to all students	39.3%	34.5%	36.6%	33.3%	42.9%
	Yes, if can't afford	39.3%	41.4%	39.0%	50.0%	35.7%
	No	21.4%	24.1%	24.4%	16.7%	21.4%
Should schools provide laptops/tablets to students?	Yes, to all students	64.3%	69.0%	56.1%	63.3%	28.6%
	Yes, if can't afford	35.7%	24.1%	38.7%	33.3%	42.9%
	No	0%	6.9%	5.2%	3.4%	28.5%

Note. N=165.

4. Discussion

The impact of COVID 19 has had a devastating effect on an already struggling educational system in the United States. This is especially true since over the years, one of the major divisions in succeeding or failing in school has been centered on the technology divide. In this case successful schools are more likely to have more technical access, such as internet and computers in the classrooms, compared to failing schools that have limited access to technology. Students attending these successful schools are more likely to have computers and internet access at home compared to students attending these failing schools. Therefore, with the closing of schools due to COVID 19, the educational system, K-12, Colleges, and Universities are now forced to rely on technology and the internet to continue to educate their communities. This could lead to further educational divide influenced by the technology divide.

The purpose of this study was to examine the impact of school closing due to COVID 19 on the classroom teachers through the eyes of technology issues across the country. The first important finding in the study is related to the overall descriptive outcomes. In general, a large percent of students across the country do not have stable or any internet services in their home. Furthermore, even for those that

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have internet, connectivity issues caused problems for the entire class. In general, teachers indicated students were doing worse academically due to being relegated to learning in an online environment. However, most teachers are offering an alternative to internet instructions when internet access is not available. Teachers overall believe their students are doing worse academically due to the online platform.

When asked about curriculum changes, only a small majority indicated they have changed their curriculum to fit the online environment. Overall, a small majority are holding class live online now; however, a large percent of the teachers reported that they had lost contact with some of their students due to the online nature of classes. Teachers proceeded to say that students may or maybe not be able to follow along with them at home. Additionally, a small majority of teachers suggest students had problems engaging with class materials due to internet connections. Most teachers did not believe internet access is an equal rights issue. However, the majority of teachers did believe that schools should provide lab top/tables to all students. When asked "should schools provide internet access to students?", many of the teachers indicated "yes", if students cannot afford it. Finally, teachers do believe that public internet will improve student participation.

The second important finding in this study is related to the comparison of responses between the teachers across regions of the country. When asked if their students are doing better or worse due to online classes, teachers from North Central and Western states advised that their students were struggling more compared to other regions of the country. Teachers in North East states tended to have less internet connectivity issues compared to other regions, and North Central and Western regions tended to have the most problems. North East states had more live class sessions and less contact lost with their students compared to other regions. With more online classes, North East teachers report fewer students were having problems engaging with class materials due to internet issues. Finally, North East teachers stated that their students were more likely to be able to follow along while at home compared to other regions.

North Central teachers had the lowest percent when asked if they were holding class sessions live. This may explain why they are reporting the largest percent of teachers that have lost contact with some of their students. Likewise, this might explain why these teachers are having the most problems with students following along with instructions at home. Similar to North Central states, Western and Southern states have a small majority of teachers that were teaching classes live. This is also associated with a large percentage of teachers reporting they have lost contact with some of their students. These teachers are also indicating a significant percent of their students are having problems following along with instructions at home.

The third important finding in this study was associated with years of teaching experience. New teachers in their first five years are less likely to offer alternatives when internet was not available compared to other teaching experience groups. Furthermore, new teachers were more likely changed

their curriculum due to internet access issues compared to other teaching experience groups. Finally a higher percent of new teachers believed the internet access is an equal rights issue compared to other teaching experience groups. Teachers with 31 plus years were less likely to change their curriculum, more likely to hold class live sessions and less likely to lose contact with their students. Furthermore, for this teaching group their students are less likely to have problems engaging with class materials because of internet connectivity issues, compared to other teaching groups. Finally, this teaching group were more likely to agree that schools provide internet access to all students and less likely to agree to schools provide laptops to all students.

5. Implication and Conclusion

It is clear from the findings that K-12 educators are indicating that internet access and internet connectivity are essential components of teaching and learning remotely due to COVID-19. As students and teachers are more rely on internet technology regardless of face-to-face or online class format, it is important that pre-service teachers are prepared properly to utilize effective use of communication technology in order to meet online instructional format. However, it appears that technology integration into either face-to-face or online class is still fragmented and taught as a separate skill set, rather than technology being embedded into all course work in the education preparation program. The problem with this approach is that while pre-service teachers are exposed to technology, they do not have adequate models that demonstrate how technology can be a tool for enhancing teaching and learning and not a just a separate skill. For effective technology integration, the program process needs to focus on the learner rather than specific content. The internet can enhance the classroom learning environment by providing instant access to class materials, teachers, and peers. This study has highlighted some of the current success and problems association with the internet and online instructions. Furthermore, this study will lead to scientific studies and large scales studies that can identify remedies to the issues that this study has identified.

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