

Introduction

School districts across the United States face challenges ensuring equitable access to learning resources for students without home access to technology. A 2018 article published by Pew Research Center finds that 15 percent of U.S. homes with students do not have high-speed internet and that low-income and minority students disproportionately lack the technology necessary for completing assignments and accessing digital resources at home.¹ Therefore, districts must explore strategies for providing learning resources equitably and reaching students without technology access or sufficient at-home support.

Hanover Research (Hanover) presents a research brief that provides an overview of the digital equity problem—the digital divide—as well as an overview of common strategies used to reduce inequities between students learning online and offline. Hanover defines offline learning as instruction that uses hard copy resources (e.g., reading material, math practice packets, writing materials, directions for at-home activities). Additionally, we include phone support and other strategies that do not require the internet within offline learning. For this report, Hanover summarizes guidance from federal, state, and local government suggestions and synthesizes anecdotal evidence from exemplar school districts.

Recommendations

Hanover recommends:

- **Create grade-level specific and content specific infographics for teachers** aligning examples of offline learning strategies with the guidance from federal, state, and local officials contained in this report;
- **Study the effectiveness and impact of current offline learning practices within districts** by surveying or interviewing teachers who have been independently developing creative approaches with their offline students;
- **Assess the loss of learning that has occurred or might occur for offline students.** Despite best efforts, offline students may fall farther behind students with more consistent access to online learning. Collecting historic and future achievement data can predict learning loss and assess actual learning lost when schools restart.

Key Findings

- **Common processes for distributing offline learning resources include on-site pick-up at schools and school bus deliveries.** Although many districts do not specify the safety precautions they use during distribution, districts should follow CDC guidelines and consider logistical suggestions provided by the Texas Education Association. Considerations include establishing pick-up time slots to reduce the number of people in one area and delivering instructional packets to mailboxes rather than handing them to families directly.
- **Offline learning formats include a variety of material that vary by content, grade-level, and hands-on interaction.** Examples of formats include textbooks, graphic organizers, at-home experiments, and art projects. Formats may depend on whether teachers design offline learning to align with the planned curriculum schedule or occur at any time. Additionally, teachers should consider both academic and social-emotional learning when selecting offline learning formats to support multiple aspects of student growth and development.
- **Through phone calls, teachers and staff members may safely connect with individuals and groups of students and parents to support academic and social-emotional learning and to reduce feelings of isolation.** Because offline learning students cannot connect with peers in classrooms or virtual chatrooms, videoconferences, etc., teachers can support and track learning and behavior via phone. Teachers may also use phones to conduct lessons with students and meetings with parents, particularly parents of students with special needs as Individualized Education Program (IEP) meetings cannot occur in person.
- **Television programs offer a low-technology, contract-free option for engaging students in curriculum-based content and providing parents with distance learning strategies and updates.** Exemplified by the Los Angeles Unified School District, districts can partner with and notify families of local, state, and national television stations with educational programming. These programs may align with educational standards, specific curricula, grade levels, and age groups. Additionally, parents can benefit from these programs as programs may include suggestions for coping with COVID-19 and distance learning.

Reviewing Offline Learning Inequity

Districts faced equity challenges caused by variations in technology access before COVID-19 spread, as shown by [this 2018 article](#) by Pew Research Center.² However, **the current shift to distance learning due to school closures threatens to increase the disproportional impact of the digital divide on low-income, minority, and special education students.**³ This impact aligns with pre-COVID-19 research, which shows financial cost as a top reason why households do not have internet access and technology resources, as shown in the following figure.

Top Reasons for Not Having Internet Access

REASON	PERCENT
Don't need the internet, not interested	43%
Internet too expensive	34%
Other reasons	10%
Internet not available in area	4%
No computer or computer inadequate for internet access	4%
Can use the internet somewhere else	3%
Privacy or security concerns	1%

Source: National Center for Education Statistics (2017 data)⁴

Additionally, internet access differs across races and ethnicities, on average, which causes certain groups to experience offline inequity challenges more than others.⁵ The following figure presents the percentage of U.S. children and students ages three to 18 with internet access according to their race or ethnicity.

Children's Internet Access by Race and Ethnicity

RACE/ETHNICITY	PERCENT
Asian	98%
Two or more races	97%
White	96%
Hispanic	91%
Black	90%
Pacific Islander	87%
American Indian/Alaska Native	80%
Total	94%






Source: National Center for Education Statistics (2018 data)⁶

Districts may attempt to reduce this digital divide during distance learning by providing homes and neighborhoods with devices, Wi-Fi hotspots, and other technical supports. For example, the South Carolina Department of Education supports districts by equipping school buses with mobile hotspots and sending them to rural areas and areas with 50 percent or more of students on free or reduced-price lunch plans.⁷

However, such supports do not eliminate equity challenges because distributing mobile devices and hotspots does not ensure internet connectivity or avoid other financial implications. In addition to financial concerns, a former Comcast executive states that the digital divide and internet connectivity barriers stem from a “complex mix of digital literacy, skills, fear and a lack of perceived need or interest in having the internet at home.”⁸

Regardless of individual students' reasons for not having certain devices or internet connection, districts can approach online and offline equity issues by considering and discussing guiding topics and questions. The following figure includes considerations provided by the U.S. Department of Education. For questions regarding continuous learning for special education students with and without internet access, Washington's Office of Superintendent of Public Instruction provides [this guide](#).⁹

Considerations for Online and Offline Learning

	How will affected parties communicate during short-term or prolonged absences or during school-wide dismissals?
	How will students understand and access available academic resources and other supports from home?
	What equipment and other resources are available or need to be acquired to enable school and district learning continuity plans?
	What additional training or experience is required to prepare all parties to respond appropriately when needed?
	How will the district or school ensure access to all materials, including for students with disabilities?

Source: U.S. Department of Education¹⁰

Exploring Potential Offline Learning Strategies

The following subsections provide strategies and resources that districts may use to promote equitable instruction. Selecting among these and other resources presents a difficult challenge. Therefore, the Michigan Department of Education (MDE) highlights that “districts should be intentional and limit their selections to those that align best with their capacity, local vision, and needs of students, and should communicate those choices to families and staff.”¹¹ Districts and teachers must select resources carefully and continue to be flexible as needs and contexts change.¹²

Physical Materials

When facilitating offline learning as opposed to online learning, Michigan Virtual highlights that “the most significant differences [...] include the format of learning

materials and the processes related to exchanging materials and information between students, teachers, and parents.”¹³ The format that teachers use to educate offline learning students relies heavily on printed materials (e.g., textbooks, worksheet photocopies) and includes activities, assignments, and assessments. Additionally, because teachers may need to collect offline learning materials for graded or non-graded review, the process for distributing and returning materials must occur safely.¹⁴

Format

When determining offline learning resources and distance learning in general, teachers must consider two approaches to instruction, shown in the following figure.

Instructional Approaches for Distance Learning

APPROACH 1	APPROACH 2
Create generic packets that students can use at any point in the school year and that promote student learning according to grade-level and subject-specific standards	Create unit-specific packets that follow the planned curriculum and integrate with the lessons that students would be learning in class.

Source: *Readiness and Emergency Management for Schools Technical Assistance Center*¹⁵

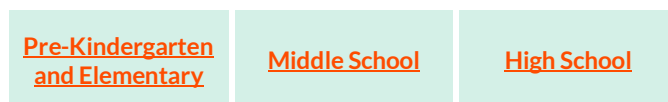
After identifying an instructional approach, teachers must carefully select materials and resources. **Offline learning formats vary regarding material, hands-on involvement, content area, and applicable grade or developmental level.** The New York State Education Department provides a list of options for offline learning that demonstrate this range of formats and require no technology. These options include:¹⁶

- Textbooks, trade books, and magazines;
- Photocopies of text, pictures, and other media;
- Printed transcripts of guided lessons;
- Photocopies of activity pages, graphic organizers, and skill-building sheets; and
- Hands-on activities that students can engage in at home, such as:
 - Conducting and documenting an experiment and analyzing results;
 - Collecting, analyzing, interpreting, and visually representing data, and using data to make a prediction or create a model;
 - Creating art;
 - Moving (e.g., exercising, taking a walk, dancing, playing, practicing yoga);
 - Writing (e.g., academic, creative, technical);
 - Counting, measuring, telling time, determining area and volume, factoring, calculating, etc. utilizing real-world objects and scenarios;
 - Noticing, sorting, classifying, and comparing;
 - Drawing a map (e.g., physical or another type of geography map; concept map);

- Performing a demonstration;
- Writing and/or performing a play, puppet show, or dramatic retelling;
- Learning about family, heritage, and culture; and
- Learning a new skill.

Districts and individual teachers may develop grade-level materials and resources by following considerations by the Michigan Association of Intermediate School Administrators (MAISA). MAISA provides guides at the elementary, middle, and high school levels for offline, mixed, and online learning. These guides are available through the links in the following figure.

MAISA’s Grade-Based Learning Plans



Source: *Michigan Association of Intermediate School Administrators*¹⁷

Furthermore, districts and teachers must consider social-emotional learning formats. Because offline learning students can no longer connect with others in school or through internet-based platforms, Washington’s Office of Superintendent of Public Instruction provides the following strategies that require little or no technology and support students’ feelings of connectedness:¹⁸

- Families support students to research their interests and share them with their family members, young and old.
 - One parent reported, “My 11-year-old researched ancient India and made a replica water wheel in our shop. He then created a slide presentation of all his research. Tomorrow he will present what he has learned to his whole family, including his cousins (also 11 and 13) on a conference call;” and
- Multi-age siblings use sidewalk chalk to draw on the sidewalk and create messages to those that walk in the neighborhood.

Process

Districts typically follow one of two common delivery processes for physical offline learning materials: **1) establishing designated pick-up locations, or 2) using school buses to drop-off materials.** Using these processes, the Texas Education Agency (TEA) notes the risks of physical resources and provides logistical considerations to support districts in supplying offline learning materials safely during the COVID-19 pandemic.¹⁹ Key risks associated with offline learning materials include possible virus transfer from:²⁰

- School personnel to the family;
- From the family back to school personnel; and
- From family to family.

The [Appendix](#) of this report summarizes these considerations and recommendations. The full document is available through [this link](#).²¹

In Michigan, the Detroit Public Schools Community District (DPSCD) demonstrates one example of using pick-up locations to distribute offline learning materials. DPSCD operates pick-up locations during designated hours (i.e., 8 a.m. – 1 p.m.) Monday through Thursday. Alternatively, students with internet access can obtain identical materials on the [DPSCD website](#).²² Staff members at these sites also distribute meals on Mondays (which include three breakfasts and three lunches), and on Thursdays (which include four breakfasts and four lunches).²³ Although DPSCD provides information on when and where pick-up locations operate as well as the instructional materials provided, *the district does not specify the safety precautions it takes to avoid contagion and practice social distancing on its website*. This lack of safety information reflects a common trend among districts that use pick-up locations, as shown by [Niles Community Schools](#) and [Manchester Community Schools](#).²⁴ However, DPSCD does include social distancing initiatives for food distribution in its [Continuity of Learning Plan](#).²⁵ Additionally, certain schools and districts, such as [Alba Public School](#), note that students must schedule a packet pick-up time, and locations limit students’ time spent inside to 10 minutes.²⁶

Offline learning material distribution using school buses presents another strategy for delivering resources and, like pick-up sites, can occur at the same time as meal distribution. The following figure shows how two Virginia districts, Roanoke County Public Schools and Montgomery County Public Schools, distribute resources safely.

District Strategies for School Bus Deliveries

ROANOKE COUNTY PUBLIC SCHOOLS	MONTGOMERY COUNTY PUBLIC SCHOOLS
Parents receive robocalls, and the district posts updates on social media and websites to notify students and parents of resource deliveries and updates.	Staff members distributing resources wear protective masks and gloves, and buses play music to indicate that they are close.

Source: *The Roanoke Times*²⁷

In general, districts and families should transfer offline learning materials through processes that align with the CDC’s guidelines and recommendations. The following links provide such guidelines for individuals and schools, which may apply to offline resource drop-off and pick-up:²⁸

- [Frequently Asked Questions](#);
- [Running Essential Errands](#);
- [Considerations for Schools](#); and
- [Cleaning and Disinfection for Non-emergency Transport Vehicles](#).

Phone Support and Services

Phone check-ins and meetings enable teachers, counselors, tutors, or other school staff to have one-on-one interactions with students or parents without requiring substantial technology resources. These calls may also occur through a conference line to allow multiple students to meet with a teacher simultaneously.²⁹ During phone calls, teachers and school staff can teach curricula, provide school or district updates, facilitate relationship-building and connections, or hold private student-specific conversations.³⁰ Maintaining lines of communication becomes increasingly important during offline learning as students without internet access or the ability to join chatrooms, video conferences, and similar social environments may feel more isolated. Therefore, regular phone calls allow teachers to speak directly with students and offer academic and social-emotional support.³¹

Phone calls also support offline learning for students with disabilities. For example, teachers can read to blind students over the phone, and parents and their child’s IEP team can continue holding conferences.³² According to MDE, “partnerships with special education teachers are key to supporting [special education] students while providing an equitable education.”³³

However, staff members must avoid overburdening students and parents with phone calls and synchronous meetings. A typical school day with six to seven hours of learning and engagement cannot occur during online or offline learning. Therefore, teachers must schedule regular yet manageable phone calls and maintain a flexible, creative, and thoughtful teaching style. Similarly, teachers should manage physical materials to avoid assignments and activities that require heavy parent involvement.³⁴

Additional Strategies and Resources

Common alternative resources to physical materials and phone calls include audio or video resources, such as television or radio programs, pre-recorded lessons or podcasts, and USB-held resources. Television and radio programs at the national, state, and local levels present common strategies to distribute educational content to students without the internet or certain devices. These programs also offer a low-cost, internet-free alternative to physical materials that parents must pick up, or schools must distribute. Television programs can support students’ engagement in schoolwork as well as inform parents about supporting children during distance learning.³⁵ Public Broadcasting Service (PBS) programming, specifically, continues to impact students learning from home. PBS stations work with local school leaders to ensure that programming aligns with educational standards and curricula.³⁶ Additionally, programs may or may not correspond with take-home assignments.³⁷



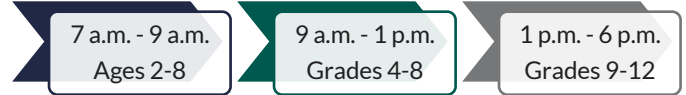
Spotlight: Los Angeles Unified School District

Los Angeles Unified School District (LAUSD) became the first district to partner with their local television stations—PBS SoCal, KCET, and KLCS-TV—to provide educational programming after the district closed in March 2020. LAUSD saw a need to support offline learning students as 80 percent of students come from families living in poverty, and one in four students does not have internet access at home. Due to district needs, LAUSD and television station leaders created a curriculum-based program schedule in one week, and stations report that the programs reach about 200,000 viewers per day.³⁸

To ensure that programs reach as many students as possible, stations run programs in both English and Spanish. Additionally, parents and teachers receive weekly newsletters, and “user-friendly, bilingual programming grids (available at athomelearning.org) are offered to viewers to see grades and subjects that accompany each programming schedule.”³⁹

In Michigan, local stations such as Detroit Public Television offer parent-focused and grade-based programming. Content for parents focuses on coping mechanisms during the COVID-19 pandemic and strategies for interacting with children as they work and play at home.⁴⁰ Detroit Public Television also structures daily programming by age and grade-level, as shown in the following figure.

Detroit Public Television Daily Educational Programming



Source: Michigan Department of Education⁴¹

Furthermore, **pre-recorded lessons, pre-recorded read-along sessions, and podcasts** can support offline equity practices. However, these strategies require advanced planning and scheduling to ensure that students receive and use pre-recorded material on time. Districts may provide pre-recorded resources on recorders, USB drives, or similar devices that do not require internet access. This approach supports district safety measures by avoiding printing and distributing large quantities of paper materials.⁴²



District-Specific Responses and Updates

The Center on Reinventing Public Education (CRPE) provides a continuously updated database of districts’ responses to COVID-19. This database, available as a Google Sheet document and interactive map, details the district, its location, its enrollment size, and a description of its closure and distance learning plan. To access this database, please visit the CRPE website through the link below.⁴³

[CRPE District Response Database](#)

Appendix

The following figure presents the considerations for offline learning resource preparation, distribution, and collection identified by the TEA.

Considerations for Offline Learning Resource Distribution

STAGE OF DISTRIBUTION	CONSIDERATIONS AND RECOMMENDATIONS	
<p>Prepare</p>	<ul style="list-style-type: none"> ▪ Do not allow school personnel who have symptoms consistent with COVID-19 to prepare packets. Each day that a staff member will be involved in packet preparation, they should, at a minimum, check their temperature before putting packets together. Staff members who are symptomatic should self-quarantine as recommended by the CDC; ▪ Do not allow school personnel to be involved in packet preparation if they know they have had close, direct contact with an individual who has COVID-19 or is otherwise symptomatic. For example, if someone in a school staff member's home is showing signs of the virus, even if they are not yet symptomatic, that school staff member should not be involved in putting packets together; ▪ Thoroughly clean any locations in the school used for packet preparation, following appropriate cleaning protocols, before packet preparation begins; ▪ Choose envelopes that do not require moistening to seal if you are putting packets in envelopes; and ▪ Wait 24 hours before distributing packets to families if only using paper-based materials. Wait 72 hours if using plastic materials. 	
<p>Distribute</p>	<p>Direct Delivery</p>	<ul style="list-style-type: none"> ▪ Consider using the US Postal Service. Given this will be an added cost, districts should document these costs appropriately. There is the possibility the federal government will reimburse such costs if there are federal appropriations associated with COVID-19; and ▪ Consider using district staff to accomplish the delivery. Take precautions so that these staff members do not contract the virus during any delivery. These staff members should avoid direct contact with people during the delivery process—use mailboxes, leave packets at doorways, etc. They should regularly wash their hands and use gloves where appropriate.
	<p>Central Pick-Up</p>	<ul style="list-style-type: none"> ▪ Establish a pick-up location that is outside the school building. For example, set up a table protected from the elements, with clearly marked bins by classroom; ▪ Encourage spread out pick-up times, so parents and students are not required to interact with others during the pick-up process; ▪ Explicitly encourage parents to maintain distance from other parents while picking up packets. For example, they should remain six feet from anyone else while picking up packets. Consider placing markers on the ground to ensure six feet of separation; ▪ Consider using vehicle pick-up/drop-off lines to avoid having families enter the building. You may ask parents to display a sign with their child's name and teacher on the dash of their car; ▪ Explicitly tell parents, "DO NOT COME if you are symptomatic. Either send someone else or wait until you are no longer symptomatic;" and ▪ Take all necessary measures to clean the pick-up area after each pick-up cycle.
<p>Return</p>	<p>Mail</p>	<ul style="list-style-type: none"> ▪ Consider using self-addressed, stamped envelopes for return. In the packets going home to students, districts can insert appropriately sized self-addressed envelopes. Parents would then mail the homework assignments back to the school; ▪ Choose envelopes that do not require moistening to seal; ▪ Provide the appropriately sized envelope(s) to accommodate the work to be returned; ▪ Pre-print envelopes with necessary no-postage-required business reply mail indicators (or put postage stamps on them if waiting for business reply mail permitting).

STAGE OF DISTRIBUTION	CONSIDERATIONS AND RECOMMENDATIONS	
	Drop Off	<ul style="list-style-type: none"> ▪ Establish a drop-off location that is outside the school building or use vehicle pick-up/drop-off lines. Use a table, protected from the elements, with clearly marked bins by classroom; ▪ Encourage spread out drop-off times, so parents and students are not required to interact with others during the drop-off process; ▪ Explicitly encourage parents to maintain distance from other parents while dropping off packets when communicating about the drop-off. For example, parents should remain six feet apart from anyone else while at the drop off; ▪ Explicitly tell parents, “DO NOT COME if you are symptomatic. Either send someone else or wait until you are no longer symptomatic” when communicating about the drop-off. In some of these cases, photos could be sent via MMS; ▪ Take all necessary measures to clean the drop-off area after each drop-off cycle; ▪ Wait 24 hours after a drop-off cycle before beginning to open the packets; and ▪ Use envelopes that do not require moistening to seal if you have provided envelopes in which parents/students return their homework packets.
	Photo Sent via MMS	Take a photo of the work and send the photo via MMS. For longer assignments, this may prove untenable, and paper would need to be returned (either via mail or drop-off). But for some assignments, this could work well. Sending images via MMS typically does not require Internet access, so this may work for many families and many assignments.

Source: Texas Education Agency⁴⁴

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- ³² “Supplemental Fact Sheet: Addressing the Risk of COVID-19 in Preschool, Elementary and Secondary Schools While Servicing Children with Disabilities.” U.S. Department of Education, March 21, 2020. pp. 2, 4. <https://www2.ed.gov/about/offices/list/ocr/frontpage/faq/rr/policyguidance/Supple%20Fact%20Sheet%203.21.20%20FINAL.pdf>
- ³³ Gustafson et al., Op. cit., p. 9.
- ³⁴ Ibid., pp. 12, 17.
- ³⁵ “Supporting Continuity of Teaching and Learning During an Emergency,” Op. cit., p. 4.
- ³⁶ Rauf, D.S. “An Unexpected Tool for Remote-Learning During Coronavirus: Public TV Stations.” *Education Week*, April 6, 2020. <https://www.edweek.org/ew/articles/2020/04/06/an-unexpected-tool-for-remote-learning-during-coronavirus.html>
- ³⁷ “Distance Learning Considerations.” California Department of Education, May 19, 2020. <https://www.cde.ca.gov/ci/cr/dl/dlconsiderations.asp>
- ³⁸ [1] Rauf, Op. cit. [2] “Los Angeles Unified ‘At-Home Learning’ Partnership With California PBS Stations Now Has Over 30 States with Local Stations Using the Model.” Los Angeles Unified School District, March 30, 2020. <https://achieve.lausd.net/site/default.aspx?PageType=3&DomainID=4&ModuleInstanceID=4466&ViewID=6446EE88-D30C-497E-9316-3F8874B3E108&RenderLoc=0&FlexDataID=87338&PageID=1>
- ³⁹ “Los Angeles Unified ‘At-Home Learning’ Partnership with California PBS Stations Now Has Over 30 States with Local Stations Using the Model,” Op. cit.
- ⁴⁰ Rauf, Op. cit.
- ⁴¹ Figure reproduced nearly verbatim from: Gustafson et al., Op. cit., p. 18.
- ⁴² “Learning Continuity: Planning Considerations for School Leaders,” Op. cit., p. 14.
- ⁴³ Preceding information and subsequent link obtained from: “District Responses to COVID-19 School Closures.” Center on Reinventing Public Education. <https://www.crpe.org/current-research/covid-19-school-closures>
- ⁴⁴ Figure text reproduced verbatim with modifications from: “Logistical Considerations for Paper-Based Packet Pickup to Mitigate Public Health Risks,” Op. cit., pp. 1–4.