Elementary Educators' Experiences Teaching during COVID-19 School Closures: Understanding Resources in Impromptu Distance Education

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Abstract

Because of the COVID-19 pandemic in late 2019 and early 2020, universities, schools, and businesses in the United States closed and moved online (CDC, 2020; "A Timeline of COVID-19 Developments in 2020," 2020). By April, 2020, it became clear that the school year would end virtually, (Anderson, 2020). Teachers throughout the United States found themselves suddenly teaching remotely. Looking at P-20 context for education, that is the understanding of education as a continuum rather than segmented parts, examining elementary implications for distance education during extended school closures provides additional information about foundational distance learning in younger students and their educators' responses to distance education. Educators, in this experience, were as much learners as they were teachers, highlighting the P-20 educational continuum. The term *Distance Education* in this study refers to learning that happens either synchronously or asynchronously while learners and educators are physically distant. Materials can be mail-based, web-based, app-based, or broadcast. Distance education can refer to instructor guided or independent study. Johnston (2020) highlights different terminology for distance education, each emphasizing the 'education' aspect of the model. However, limitations of socioeconomic status and of access to technology, both technology-based and non-technology-based elements of distance education are included in this study.

Literature Review

Historically, students who could not attend school for reasons of not only public health, but also reasons including employment, incarceration, military service, and isolated locations looked to distance education to fulfill their educational needs (Reinoehl, 1929; Barbour, 1953; Charly, 1955; Ash & Davis, 2009). Students would then complete an assignment and mail it to an instructor who would, hopefully, provide written feedback returning it with the next assignment. This process would continue until all material had been completed. These programs varied in quality and presented challenges. Often lack of oversight and advising caused students who began correspondence courses to not finish ("Correspondence course mortality found high," 1934). Ultimately, advances in technology, such as audiovisual recordings, broadcast lessons, and computer assisted learning via programs provided more interactive experiences, (Johnston, 2020; Pryor, 2020). The internet emerged and distance learning could overcome the initial challenges of limited feedback and oversight, (Bennett, 1999). Students could receive timely feedback and guidance from their educators.

As internet use became more affordable and widespread, content became more accessible not only for consuming information, but producing information, which demanded a shift in pedagogy (Bennett, 1999; Cabero, 2006; Kentnor, 2015, Cates, 2020). Access to technology and material alone does not equate mastery. Low-literacy and limited literary proficiency often create rifts in distance education for students when compared to their more proficient peers, (Vazquez & Chiang, 2016; Mansheim, 2017). Whether materials are online or whether they are printed, students who struggle in the classroom still need additional support that may not be available in distance education, (Mansheim, 2017). Students who have limited technology skills often experience difficulties accessing online materials, (Dennis, 2003). Elementary students, especially in lower grades, are not proficient readers who can access all content (Benjamin, 2012). Additionally, elementary students often lack formal technology education and may struggle accessing online content. These create additional challenges for younger students. Students also need social development. Social support also impacts success in distance education. The idea of "belonging" plays an important role in successful distance education (Reinoehl, 1929; Alonzo Dias & Blazquez, 2009; Marsap & Narin, 2009; Pike, Kuh, & McCormick, 2011; Hew, 2014; Poston et al., 2015; Anderson, 2020).

COVID-19 widespread school closures and unplanned wide-scale reliance on distance education illuminates a gap in research and highlights key misunderstandings about what distance education is and what it is not. Elementary-leveled distance education would benefit from additional focus, and educators' voices are often omitted from the conversation about distance education. This research

provides additional information about experiences of elementary educators who serve rural populations during the COVID-19 school closures at the end of the 2019/2020 school year.

Method

Eighteen elementary educators who were currently employed in public schools located in Western Tennessee and Western Kentucky and served rural, non-metropolitan students were individually interviewed about their experiences during distance education. The purposefully selected participants each had at least five years of teaching experience. None of the participating educators had previous training or experience teaching remotely. All interviews were conducted via Zoom, telephone, or on FaceTime as preferred by the participants. Phenomenological interview processes were used to determine background and context for each participant as they recounted their experiences during distance education. All participants were interviewed before the 2019/2020 school year concluded; they were still teaching while being asked about their experiences.

Level I IRB protocol was followed for the protection of participants. Interviews were audio-recorded with participants' knowledge and permission. Questions were prepared ahead of each interview. All interviews began by asking for background and job-description. After scripted initial questions, the researcher followed each participant's lead to ask questions in a logical manner, all participants addressed prescribed topics, but the order may have differed slightly among participants.

After concluding interviews, the researcher transcribed interviews. She sent the transcripts to participants to review and approve, checking for typographical errors and for verification. Afterwards, the researcher added randomly assigned an alphabetic identifier to the transcript and added it to the database.

The researcher created handwritten codes for themes that she applied to the data. She then re-coded interviews in *Dedoose*. She organized codes according to literature review. The literature provided structure for a hierarchy of parent and child codes for data. Additionally, *Dedoose* allowed the researcher to assign a weight to terms. The connotation of participants' responses maintained the integrity of responses to provide a holistic understanding of meaning.

After coding the transcripts, the researcher analyzed the data and code counts. She analyzed co-coding and weights of positive and negative experiences as expressed by participants. The researcher decided to select both descriptive data and experiential data to reflect the narrative-nature of the method.

Analysis

The researcher interviewed 18 current educators who worked with elementary students to provide distance education during extended school closures. The educators were experienced, each with five years of experience or more. They worked at public school in either Western Kentucky or Western Tennessee and served students from rural populations. Of the 18 participants, six were classroom teachers, one in each grade from kindergarten to fifth grade. The other participants included two music teachers, two art teachers, two P.E. teachers, two speech and language pathologists, two guidance counselors, and two teachers who work with students who have learning needs. Table from Pryor, (2020), "Understanding educators' experiences during long-term school closures" a P-20 Leadership Dissertation at Murray State University.

Participant	Number of Subjects Taught	Grades Taught	Technology Available at Home *school provided	Pre-Extended School Closure Technology Use in Classroom
Participant H	Single	K-8	Internet, Laptop, Chromebook*	Some applications, Class Dojo
Participant J	Single	K-5	Internet, Surface Pro*	Some applications
Participant K	Multiple	2	Limited satellite internet, no home phone, went to school to use technology	Class Dojo
Participant L	Single	K-8	Internet, laptop*	Some applications
Participant M	Single	K-3	Internet, laptop*	Facebook (for school)
Participant N	Single	K-8	Limited, went to school to use technology	YouTube to watch videos
Participant O	Single	3-5	Internet, laptop*	None
Participant P	Single	K-5	Cell phone, went to school to use technology	Class Dojo
Participant Q	Single	K-8	Cell phone, went to school to use technology	None
Participant R	Single	K-8	Internet, but limited and shared with many family members, laptop*	Remind, GoogleClassroom

(limited this year), Applications, Chromebooks, Class Dojo Participant U Single K-8 Internet, laptop* Facebook, Clas Dojo Participant V Single K-5 Internet, Some SurfacePro* applications Participant W Single 5 Internet, Laptop* Some applications, school website,	Participant	Number of Subjects Taught	Grades Taught	Technology Available at Home *school provided	Pre-Extended School Closure Technology Use in Classroom
(limited this year), Applications, Chromebooks, Class Dojo Participant U Single K-8 Internet, laptop* Facebook, Clas Dojo Participant V Single K-5 Internet, Some SurfacePro* applications Participant W Single 5 Internet, Laptop* Some applications, school website,	Participant S	Multiple	1	Internet, laptop*	SeeSaw, Facebook,
Participant V Single K-5 Internet, Some SurfacePro* applications Participant W Single 5 Internet, Laptop* Some applications, school website,	Participant T	Multiple	3	Internet, laptop*	year), Applications, Chromebooks,
SurfacePro* applications Participant W Single 5 Internet, Laptop* Some applications, school website,	Participant U	Single	K-8	Internet, laptop*	Facebook, Class Dojo
applications, school website,	Participant V	Single	K-5	,	201110
Kemmu	Participant W	Single	5	Internet, Laptop*	
Participant X Single 4 Internet, Some SurfacePro* applications, online textbook	Participant X	Single	4	,	
Participant Y Single K-8 Internet, Laptop* Some applications,	Participant Y	Single	K-8	Internet, Laptop*	

Participant Z Multiple K Internet, Class Dojo,
SurfacePro* Google Drive

Educators indicated two primary features that defined their resources in distance education: materials and time. When asked about materials, participants focused primarily on technology-based materials. Non-technology-based materials were often a side note in responses. Given the large population of rural students in the area, this was surprising. Time was a factor for some participants, but less than expected. Educators expressed positive experiences associated with distance education and others expressed frustration. Key elements of adaptation, establishing routine, and using procedures coincided with positive experiences. Lack of technical support and feedback consistently resulted in frustration.

As teachers who were accustomed to face-to-face teaching were adjusting to distance education, organization became important. Time management changed from face-to-face teaching, educators were learning how to restructure their schedules and routines during distance education. They found out that they needed to change how they managed classes, "Consistency is a big thing for me, so inconsistent, everybody was just learning. When you have those kids in class and you know what they've done, you know what they've turned in" (Participant S).

Routine is important for educators in the classroom. Routine provides an efficient way to manage learning and provides structure so students know what to expect. Distance education forced educators to change their routines. Once educators could adapt to distance education, they differed in whether they were spending the same or less amounts of time. "I've had some time to sit down and think about it. I've been able to have more uniformity, and it has a little more pattern. I'm able to be more organized," remarked Participant K when talking about time spent on distance education.

Some educators created a weekly schedule that helped them be more efficient (Participant P; T; W). Participant T also discussed the importance of a schedule:

"Once we got our schedule how we're going to do things we have been the same... you need the consistency. It's better to have it the same from week to week. We're still going to do different things, but we have a schedule it's better...It gets the students into a routine...They can check (lessons) off the list," (Participant T).

Often, the routines developed by educators reflected the needs of their students and the parents, "I made my Zoom meetings at night, so that way working parents would hopefully be home at that time. So, parents would be there, and if a kid needed any help someone would be there who could help them," (Participant W). Routines provide structure for time for educators and for students. Procedures also provide structure for knowing how to use materials.

Participant R discussed procedures for how parents could access and return work without using a platform- parents would pick up the papers, "We're giving them three weeks' worth of work to do. Monday through Friday, they have assignments for 3 weeks and they can pick those up. So we've had paperwork that way." This low-tech system is reminiscent of mail-order correspondence courses with high-attrition rates. These students were reported to inconsistently return work, and were less likely to return work, (Participant K, O, R, S, W). Taking photos and sending screenshots became a way for parents to return assignments. Providing timely feedback is especially important for young students. One educator lamented "but with the distance they might have done the paper two days ago and they send a picture, but they did it all incorrectly and I couldn't stop it." (Participant K).

For younger students, communication with parents was important, "...every year I create a Facebook page for my class. I have been able to communicate with them that way and I have been able to share updates. Each week I would post journal writings for them to do," (Participant S). Participant W added that some students "were saying that they didn't know how to get on Google Classroom, although they had been getting on Google Classroom all year. They said they couldn't get on, or the internet wasn't working." Helping parents understand technology and procedures allowed them to support their students' learning from home.

Teachers are acutely aware of the limitations of their students at home. 16 of 18 participants worried about students not having access to supplies at home. "...it was kind of hard to know what kind of materials the students would have at home. Some of them, it would take them a while to find a pencil...or anything," (Participant V). Even support from home was an issue, when talking about an activity to support the learning she presented, "I tried to give them options as far as if they had a partner or if they didn't have a partner...if it's just you," (Participant J). Access to technical resources was also problematic, "40 to 50% of our students don't have internet capabilities, so we couldn't use it as a primary source...because so many students don't have internet at home," (Participant K). Participant K also lived in a rural setting and lacked highspeed internet at home. The interview was particularly difficult because Participant K also lacked a home phone and cellphone coverage was spotty at best.

Very few non-technology-based materials were mentioned. Some educators understand their students' lack of access:

"There were some offline lessons as well because we have about half of our students, maybe two-thirds of our students, who are paper packet. Some of them are both but they also opted to have a paper packet as well as online. For those students I told them to do online things because our online things are able to be a little bit more interactive. The paper packets were basically worksheets, which I don't use. Ever...it's not the way I teach, but at least they're reinforcing some things that they've learned. It meets the standard for what we were asked to do," (Participant J).

Being able to adapt materials to meet students' needs based on available resources takes time and planning, "I was struggling with how to make that (lesson) into a technology that we could use. So, we went on a virtual field trip to Seattle Aquarium" (Participant Z).

Having clear procedures and expectations provided more positive experiences for educators:

"Some teachers are better at facilitating that structure and a Zoom structure with a lot of kids. They will purposefully popcorn around and ask all of the kids questions or things like that and others are just a free-for-all and it's really stressful," (Participant J).

Some procedures transferred from class:

"In class, they put a thumbs up if they're thinking. If they thought of something, they would put up one finger, if they thought of one thing or they would give two fingers if they thought of two things, or three fingers if they bought three things. We were able to still do that on the Zooms—and it was easier that way," (Participant Z).

Like all teaching, interfacing with technology is a skill. Zoom was touted as a good way to interact with students synchronously and provide a structure similar to face-to-face instruction. Lesson continuity was easier for teachers who were able to interact online through Zoom:

"after we read, we unmute because we mute while we read. We talked about the characters or we talked about the setting... I teach it. We make predictions about what's going to happen. We talk about feelings. What I'm doing virtually, is number one keeping them motivated, and keeping that connection. Because for me that's the thing they're missing the most, that's the most important" (Participant T).

During the extended school closures, educators had time to explore resources and try new techniques. Some educators have found a new love for technology: Participant J shared the sentiment:

"I used to think it was hard to make videos and show people where everything is; those videos that I used to see and think, wow I couldn't do something that oh, now I do. And people are asking what are you using to record your videos? They've seen some of my videos and I really love this," (Participant J).

Educators are innovative and flexible.

"One of my colleagues has read stories out loud and has done some specific language activities and is posting those for the school Facebook page. I have fallen into doing that too and...man I never thought that was something I would be able to do. And I love it! I feel that it has been a cool thing... Being able to connect and saying to a child 'Come along with me and let's do this together' even though they're watching it on a screen- so that's totally different," (Participant L).

Overall, educators have had mixed feelings about technology, while some have appreciated the opportunity to be innovative, implementing new ideas, and some have loathed this experience:

"Made it to about the second week, and I was sick of being behind a computer. I did not choose a profession that put me behind a computer. That is not okay. That's not my forte. I don't like it," (Participant Z).

Educators have indicated fatigue on the part of their students:

"When we get back together, these kids are not going to want to be on a computer anymore. That's what they've done for eight weeks.... and they are tired of it! They don't want to do anymore...The kids say things like 'I just want to sit and read with you'...and I tell them that I understand and I get it," (Participant T).

Educators focused on different resources of distance education. Technology-based materials, non-technology-based materials, time, and procedures emerged as primary focus for many educators.

Conclusion

The response to COVID-19 extended school closures provided opportunities for traditional teachers to explore distance education. Quality online instruction is not simply remote learning (Kentnor, 2015; Cates, 2020). Some participants employed technology for unidirectional teaching, in what Vazquez and Chiang (2016) referred to as 'chalk-n-talk' (Participants N; O; Q; V). Participants J and M each noticed colleagues' tendencies to use technology as a platform for lectures. Research indicates the importance of changing pedagogical paradigms when teaching virtually (Cabero, 2006; Kentnor 2015; Cates, 2020).

Initial onslaught of student and parent emails, messages, and phone calls regarding onboarding and technology support consumed most educators' time. After the first two weeks, participants indicated a downturn in the time required to provide platform support. They could shift their focus to teaching.

While all eighteen educators indicated initial hesitation and dubiousness of success in distance learning, most (15 of 18) indicated that they benefitted from this experience and they plan to carryover elements of distance education into future teaching. Several

educators (11 of 18) indicated that they had never envisioned themselves as distance teachers but found genuine benefit in aspects like independent learning, higher level thinking, organization, use of technology to individualize learning, and improved communication with stakeholders. Eight educators explained how this opportunity to explore distance education has caused them to take a leadership role in the professional community, changing their self-concept as consumers of professional resources to producers of resources for other professionals (Participants H; J; L; M; N; T; U; W). Educator identity in a distant learning environment would be a topic for additional research.

Clear expectations improved educators' perceptions of distance education. Teachers who had clear procedures for students and created a routine also reported consistently better outcomes (Participants J; M; T; Z). Procedures are crucial for good face-to-face classroom management (Wong, Martinez, & Wong, 2018). Distance education does not differ in its reliance on importance of procedures.

Recommendations

P-20 leaders need to provide expectations and resources for classroom educators to be successful in supporting learners' success during distance education. Providing training for students and stakeholders may minimize future difficulties and pitfalls.

Ultimately, distance education is distinctly different from traditional, face-to-face content delivery (Cabero, 2006). While distance education has been prevalent in post-secondary and post-graduate levels of education, distance education has much to offer all educators along the P-20 continuum. Elementary educators who embraced benefits offered by the individualistic, self-paced nature of distance education while mitigating potential pitfalls of limited-access, limited-interaction, and limited-oversight, reported having the most positive experiences during impromptu distance education because of extended school closures due to COVID-19.

Providing educators with training that provides support in understanding pedagogical difference in traditional face-to-face classroom settings and distance education and online education will create a better experience for them. Promoting key ideas for meaningful bi-directional communication will be a key challenge for some educators. Creating clear procedures and routines for distance education for parents and for students will be imperative for evolving distant-classroom management. Leaders and policymakers also need to understand that during this shift, teachers are learners, and they need support and time to plan and understand changes and challenges associated with this shift. Just as educators recognized the learning curve and initial reaction of: "I see myself... look I'm on the TV," (Participant Z) of distance learning, with time and support, distance lessons "became very informative and we would ask lots of questions" (Participant Z), educators and stakeholders need to be patient while they explore the possibilities and opportunities available.

Distance education has so much to offer students, and educators are dedicated to the wellbeing and success of their students. Educators "don't need books or a school building or technology to get learning across. They find ways to do it. I think a lot of teachers deserve credit for that," (Participant Q). With the right support and resources, stakeholders and educators will see how much distance has to offer all students.

Limitations

This study focuses on only 18 participants from the rural areas of Western Kentucky and Western Tennessee, it should not be overgeneralized to all educators. The qualitative study uses a phenomenological framework which requires the researcher to play an active role in data analysis. While the researcher avoided bias wherever possible, inherent bias always exists. Participants were only interviewed once; additional and follow-up interviews may have yielded different responses. Additionally, there was a two- and one-half week span between the first and last interview, because of the evolving nature of the COVID-19 closures and policies, differences in experiences were beginning to emerge throughout the interview process. Additional research and follow-up interviews would provide additional data.

References

Alonzo Diaz, L., & Blazquez Entonado, F. (2009). Are the functions of teachers in eLearning and FacetoFace learning environments really different? *Journal of Educational Technology & Society*, *12*(4), 331–343. Retrieved from https://www.jstor.org/stable/pdf/jeductechsoci.12.4.331.pdf

Anderson, S. (2020, May 6). "No time to say goodbye" How Coronavirus is changing learning. Retrieved from Patch website: https://patch.com/wisconsin/mountpleasant/no-time-say-goodbye-how-coronavirus-changing-learning?
https://patch.com/wisconsin/mountpleasant/no-time-say-goodbye-how-coronavirus-changing-learning?
https://patch.com/wisconsin/mountpleasant/no-time-say-goodbye-how-coronavirus-changing-learning?
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Ash, K., & Davis, M. R. (2009). ELearning's potential scrutinized in flu crisis. *Education Week*, 28(31), 1–12. Retrieved from http://www.edweek.org/ew/toc/2009/05/13/index.html

Barbour, R. B. (1953). Correspondence courses as a supplement to practical vocational training. *Journal of Correctional Education* (19491972), 5(3), 50–53. Retrieved from https://www.jstor.org/stable/44858724?seq=1

Benjamin, R. G. (2012). Reconstructing readability: Recent developments and recommendations in the analysis of text

difficulty. Educational Psychology Review, 24(1), 63-88. Retrieved from http://dx.doi.org/10.1007/s1064801191818

Bennett, F. (1999). Education and the future. *Journal of Educational Technology & Society*, 2(1). Retrieved from www.jstor.org/stable/jeductechsoci.2.1.4

Cabero, J. (2006). *Bases pedagógicas del e-learning*. Retrieved from Universitat Oberta de Catalunya website: https://ddd.uab.cat/pub/dim/16993748n6/16993748n64.pdf

Cates, S. (2020, April 27). The remote-learning response to COVID-19 is remarkable. It also highlights a problem. Retrieved May 2, 2020, from Big Think website: https://bigthink.com/Charles-Koch-Foundation/teacher-education?rebelltitem=1#rebelltitem1

CDC. (2020, February 11). Frequently asked questions. Retrieved from Centers for Disease Control and Prevention website: https://www.cdc.gov/coronavirus/2019-ncov/faq.html#Coronavirus-Disease-2019-Basics

Charly, H. T. (1955). Teaching foreign languages by correspondence. *The Modern Language Journal*, 39(7), 353–354. https://doi.org/10.2307/321045

Correspondence course mortality found high. (1934). The Science NewsLetter, 25(669), 70–70. https://doi.org/10.2307/3910127

Dennis, J. (2003). Problem based learning in online vs. face-to-face environments. *Eue*, *16*(2), 198. Retrieved from https://pubmed.ncbi.nlm.nih.gov/14741905/

Hew, K. F. (2014). Promoting engagement in online courses: What strategies can we learn from three highly rated MOOCS. *British Journal of Educational Technology*, 47(2), 320–341. https://doi.org/10.1111/bjet.12235

Johnston, J. P. (2020). Creating better definitions of distance education. *Online Journal of Distance Learning Administration*, 23(2). Retrieved from https://www.westga.edu/~distance/ojdla/summer232/johnston232.html

Kentnor, H. (2015). Distance education and the evolution of online learning in the United States. *Curriculum and Teaching Dialogue*, 17. Retrieved from https://digitalcommons.du.edu/cgi/viewcontent.cgi?article=1026&context=law facpub

Marsap, A., & Narin, M. (2009). The integration of distance learning via internet and face to face learning: Why face to face learning is required in distance learning via internet? *Procedia - Social and Behavioral Sciences*, *1*(1), 2871–2878. https://doi.org/10.1016/j.sbspro.2009.01.510

Mansheim, R. L. (2017). A comparative study of socioeconomically disadvantaged and non-socioeconomically disadvantaged fourth-grade students in reading and math in an online charter school and a traditional school (Order No. 10742560). Available from ProQuest Dissertations & Theses Global. (2001577107). Retrieved from https://media.proquest.com/media/pq/classic/doc/4325245923/fmt/ai/rep/NPDF?s=bkDBy%2Bm0AbnEEK8x7rOjz2jl4Cc%3D

Pike, G. R., Kuh, G. D., & McCormick, A. C. (2011). An Investigation of the contingent relationships between learning community participation and student engagement. *Research in Higher Education*, 52(3), 300–322. Retrieved from https://search.proguest.com/openview/4035b93285a03711c44bf7df75576fa4/1?pq-origsite=gscholar&cbl=54013

Poston, J., Bichelmeyer, B., Morgan, R. K., Olivares, K. T., Becker, J., & Wolter, R. (2015). How to engage students and create high teaching presence in online courses. In *Quick Hits for Adjunct Faculty and Lecturers* (pp. 38–39). Retrieved from https://www.jstor.org/stable/j.ctt17rw5ft

Pryor, J.D. (2020). *Understanding educators' experiences during long-term school closures* (P-20 Leadership Dissertation). Murray State University. Retrieved from https://digitalcommons.murraystate.edu/etd/179/

Reinoehl, C. (1929). Standardizing correspondence instruction. *The Journal of Educational Research*, 20(4), 260–267. Retrieved from https://www.tandfonline.com/doi/abs/10.1080/00220671.1929.10879989?journalCode=vjer20

Vazquez, J. J., & Chiang, E. P. (2016). Preparing students for class: A Clinical trial testing the efficacy between multimedia prelectures and textbooks in an economics course. *Journal of College Teaching & Learning (TLC)*, 13(2), 37–46. https://doi.org/10.19030/tlc.v13i2.9631

Wong, H., Martínez, W., & Wong, R. T. (2018). The first days of school: How to be an effective teacher. Mountain View, Ca: Harry K. Wong Publications.