

# REDEAFINING ACADEMIC COLLABORATION

Welcome to ReDEAFining Academic Collaboration, an exciting new e-journal that features articles from professionals in Deaf Education which discuss current topics of interest that relate to Deaf, DeafBlind, and hard of hearing children and adults. Through research, education, and collaboration, this e-journal provides accessible knowledge and resources in language that is easily accessible to advocate and empower the lives of Deaf, DeafBlind, and hard of hearing individuals.

The purpose of ReDEAFining Academic Collaboration is to provide an e-learning environment to share knowledge, research, experiences, and perspectives. Scholars, researchers, families, educators, administrators, and readers from all walks of life will learn about critical issues such as cognition, bilingual education, language, literacy, assessment, curriculum, Deaf culture, special education, diversity, and so forth that relate to Deaf, DeafBlind, DeafDisabled, and hard of hearing children and adults.



## **From bricks to clicks: Overcoming the challenges of transitioning to eLearning.**

In the spring of 2020, the COVID-19 pandemic necessitated many schools and school districts to close and/or abruptly transition to online learning. Some schools were prepared, many were not. Particularly impacted were Deaf, DeafBlind, DeafDisabled, and hard of hearing students who may or may not have had secondary disabilities, paraprofessionals and sign language interpreters, and the necessary technology equipment and Internet access to accommodate video conferencing.

Compounding the above is that Deaf education is a small and niche field—often, the frontline stories, anecdotal teaching strategies, and successes are not shared outside of a local level. Think of how often you may have wished you could see how other people in your shoes may approach a particular situation or topic. This issue covers some of the challenges in transitioning to online learning in the field.

# MEET THE EDITORS



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# LETTER FROM THE EDITORS

When one hears of “research” - the expectation is that the information is going to be dry, dense, full of jargon, and inaccessible for most. In all honesty, the expectation would not be incorrect as research articles are often not accessible to the “lay person” or non-academic people. Furthermore, parents, families, and professionals often struggle to access timely information in an easy-to-understand format in order to develop informed perspectives in making crucial decisions with potential repercussions and ripple effects.

To meet the above-identified gaps, ReDEAFining Academic Collaboration was developed in the fall of 2017 as a joint project between Lamar University, Gallaudet University, and Western Oregon University. The goal was to provide a space for faculty and students to create and showcase translations of research articles in both ASL and English. Topics of interest related to Deaf, DeafBlind, DeafDisabled and hard of hearing children and adults are the focus of ReDEAFining Academic Collaboration.

To date, it has 12 ASL translations of topics ranging from infant eye gaze, dinner table dialogue, dynamic assessment, DeafBlind Intervenors, and many more. There is even a section on Childhood Language Acquisition with six different videos spearheaded by several of this issue’s editors.

This particular issue is the first in what we hope is a series of annual issues centering on a specific topic. The genesis of this issue was developed as a call for papers shortly after the COVID-19 pandemic spurred many closures, stay at home orders, a sudden transition to online working and learning, and a general upheaval in many of our society’s norms and customs. We saw teachers scrambling to figure out how to translate their “bricks” or in-classroom lesson plans and teacher techniques to an online or “clicks” format. Facebook groups sprouted up such as *DHH Teaching During COVID-19*, which currently has six thousand members. Educators and professionals quickly began sharing resources about Zoom meetings, ideal software, programs, lesson plan ideas, how to navigate resources, and so forth.

The goal of this issue was to *document* what was happening and to *share* information and resources. We hope you enjoy this issue and the variety of content presented. We plan to release annual issues each summer - please be sure to follow our website or social media pages for more details and to submit your own work.

Submissions are welcome at any time and will be published on [our website](#), please visit the URL for submission instructions. If you have an idea for a theme or wish to guest edit an issue, please contact [agreene7@lamar.edu](mailto:agreene7@lamar.edu). It is our hope that this resource can continue to grow organically and with community contributions and support.

Together, we can break the barrier between academia and daily life to make those crucial linkages between research and practice.

*Drs. Clark, Greene-Woods, Cue, and Delgado*

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## Coronavirus School Dismissal: Lessons Learned by a Deaf Day School

Nathan E. Harrison, Misty Sides, Michelle Tanner, Jeanna Chiodo, Paige Huefner, Coleen Jennings, Kayla Meese, Shari Solomon-Klebba, and Kristy Tolman

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It is safe to say that the coronavirus pandemic of the 2019-2020 school year was a challenge that schools, especially Deaf schools, could not have predicted they would face. Schools were closed, schedules altered, and instruction moved to an online format. One such Deaf school impacted was the Jean Massieu School of the Deaf (JMS) in Salt Lake City, Utah, a day school campus of the Utah Schools for the Deaf and the Blind (USDB). JMS uses an ASL/English communication philosophy and, at the time of the coronavirus events, had 23 teachers, 14 para-educators, and 115 students, from preschool (age 3) through high school.

As the first cases of coronavirus were confirmed in Utah, there began to be a great deal of speculation about the potential for school closure and the impact on students, with JMS faculty joining this discussion. On Thursday, March 12, 2020, the governor of Utah recommended bans of groups of more than 100 (State of Utah, 2020). At the time, schools were specifically exempt from the 100 person limit and state officials made it clear that schools were not to close without the recommendation of their respective health department. This, of course, led to more discussion about how to approach remote learning for students. Despite assurance that schools would stay open, the next day, the Governor and State Superintendent introduced a two-week school “dismissal,” which was intended to be a “soft closure” of public schools where students transition from live instruction to remote learning at home through a combination of online and packet-based instructional practice (Utah State Board of Education, 2020). Schools were given a two-day period of time, which counted as instructional days, to allow for preparation by teachers to start remote learning. Thus, JMS and educators around Utah found themselves in the unique

position of having two days to transition from a traditional, brick-and-mortar school to online experiences.

Moving to virtual learning, JMS had some unique foresight in preparing for the transition and successes during online learning in addition to the fair share of challenges that teachers had to overcome. This paper will expand on the state of the school before the pandemic, the transition to online learning, and teachers' reflections concluding with the lessons learned. The table in the appendix (page 56) shows teachers' perspectives on the efficacy of the digital tools used for teaching and learning during this pandemic.

### **The State of JMS Prior to Coronavirus**

For several years prior to the coronavirus events, all USDB campuses had been transitioning towards competency-based education (CBE). These approaches heavily emphasized integrating digital teaching and learning as a vital tool for the success of deaf/hard-of-hearing (D/HH) students. CBE has been increasingly implemented in both in campus programs (like JMS) and in statewide outreach efforts.

The move to CBE was foundational in preparing for the unforeseen coronavirus impacts. Levine and Patrick (2019) explain how traditional grading, forced time spent on a skill/concept in a classroom, and the one-size-fits-all approach are ineffective. The authors propose that a move towards a focus on mastering standards and objectives, with assignments focusing on learning and mastery, not just busy-work or behavior-training will allow students more opportunities to have greater voice and choice in their own learning. USDB policy allows teachers to focus on mastery and grants class credit based on students' demonstration of skill, rather than being beholden to seat time. This mindset gave our teachers the freedom to focus on essentials during the school dismissal.

Thus, before coronavirus became an issue for education, USDB had already begun moving towards digital teaching and learning, which is the idea that technology should be used to improve, innovate, and enhance both teaching and learning (U.S. Department of Education, 2017). This move meant investment in a wide variety of free and licensed apps, software, and digital tools for teachers to use (see appendix). The JMS secondary teachers heavily utilized Canvas as a learning management system and preschool/elementary teachers began using SeeSaw as a student and parent engagement platform. Prior to this year, the notion of being a one-on-one technology school was extended so that every student in elementary and preschool had access to an iPad for home use; secondary students each received a Chromebook and were expected to use it in all their classes daily. Having one-on-one technology before the school dismissal was vital to the successful transition to remote learning. The degree that teachers had utilized this technology

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both in and out of the classroom before the dismissal also played in a role in how comfortable teachers felt with the abrupt transition.

In the recent past, a major barrier to digital learning for D/HH students in Utah was the lack of fully accessible online learning opportunities (Lago & Acedo, 2017; Pappas et al., 2018). Therefore, in the 2019-2020 school year, USDB introduced USD Online, a new school division, to create online courses

accessible in ASL, starting with a handful of classes. This program moved along the role of online and hybrid learning for students, with several JMS secondary students participating in online classes.

With these factors coming in to play at USDB and, specifically, JMS, one more event helped prepare the way for the eventual school dismissal. On February 3, 2020, a rare snow day was called across much of the state of Utah. That day, the USDB administration questioned why a snow day could not be transitioned to an online day to minimize the difficulties associated with snow days (see Digital Promise, 2015). After this time, teachers were asked to prepare a simple plan for how online learning could be used in place of a snow day or other unplanned school closure in the future, which turned out to be a prophetic request.

### **Preparation and Implementation of School Dismissal**

There are a lot of barriers to successful online/distance learning for D/HH students (Donne & Rugg, 2015), although D/HH students can be successful when given the appropriate support (Burgstahler, 2015; Richardson, 2015; Wicks, 2010). These factors had to be considered and implemented in just two days. In reality, USDB teachers had been considering their plans and approaches for at least a week in preparation for what could happen. These plans were initially considered for online snow days, thus teachers had a small jump-start. It also helped that digital tools, such as Canvas or SeeSaw, were being used, with varying levels of fidelity, by teachers.

After two days of preparation, March, 18, 2020, began the first day of distance instruction, followed immediately by spring break. Over the next few weeks, the two-week dismissal became six weeks which then became the entire fourth quarter. Teachers experienced successes, struggles, changes, student motivation and apathy, and the unique challenges of teaching from home. Adding to the challenge of distance instruction was the fact that the students had wildly varying levels of familial support for home learning. In this section, different groups of teachers share their experiences,

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successes, and struggles with this school dismissal.

### **Preschool (Misty Sides)**

Transitioning to an online platform in two days was easier than expected in a sense that the conceptual ideas were already in place for the school, while the implementation needed to be solidified. With the understanding that parents were working and tending to other children, a suggested flexible schedule was put into place for parents to pick and choose from live Zoom lessons, recorded Zoom lessons, and academic and linguistic resources. Families were already in the habit of using SeeSaw as a communication platform. However, as multiple people started posting, it became harder to read and shift through the information, thus we set up a Google Classroom. Multiple parents reported that they favored Google Classroom because everything was organized in one place. Providing an array of multiple resources allowed parents to choose what they were comfortable with, addressed multiple learning styles for parents and children, and reduced the boredom of students.

### **Elementary (Paige Huefner)**

Moving to a distance/online teaching model overnight resulted in throwing students into a school model that was a struggle to navigate effectively. Despite the less than ideal circumstances, I was lucky to have students and parents who willingly jumped in and succeeded with multiple students showing progress on individual goals and skills. Even with the significant challenges presented by online learning, students showed remarkable resilience and capability in continuing to learn through the end of the year.

Elementary students accessed Seesaw as a content delivery method, which was a good fit for my second grade class. Students submitted work assigned on a regular basis and teachers were able to provide feedback through comments, images, and emojis. Individual work sessions on Zoom were also highly effective for targeted instruction and practice. The biggest limitation during online teaching was providing group instruction and instruction on newer content without the opportunity for discussion. Students used iPads to connect and were limited to 9 participants in view at one time. Our class had 12 students and two teachers, so doing any activities in a more conventional format with everyone participating was a challenge. We had a daily social time during lunch that students enjoyed, even with a larger group. Lack of familiarity with digital tools ahead of time was another struggle. In spite of the challenges, students still showed academic progress.

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## Secondary (Coleen Jennings, Kayla Meese, Shari Solomon-Klebba, and Kristy Tolman)

Online instruction during coronavirus was less than ideal. Family dynamics, social distancing, Internet

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State of Utah, 2020.

access, and the rapid nature of transferring classroom instruction to an online environment contributed to many school systems becoming overwhelmed. With our Deaf students, the difficulties were compounded by having to make everything accessible to ASL users plus the fact that many families have difficulty communicating with their children. The greatest struggle at the secondary level was not being able to support students who, in the classroom, relied heavily on the adults in the room to guide every activity.

Independence and self-advocacy were difficult to reinforce from a distance. Students had trouble seeing distance learning as essential and asking them to complete work on their own at home was a barrier for many. However, to see these students begin to show growth in self-starting, independence and work completion also became the greatest success during this time.

We have overcome this challenge as a secondary team here in Utah due to USDB's innovative mindset. Luckily, we had the privilege of being ahead with various technological resources and having experimented with technology for several years before the COVID-19 pandemic. The students already had been exposed to various technology resources using iPads, Chromebooks, and Canvas, which allowed our students to be more prepared.

## Resource/Deaf with Disabilities (Jeanna Chiodo)

Consistency was the greatest strength for both teachers and students during this harrowing time. I scheduled a standing Zoom meeting at the same time daily with one core group of students. Some students did not miss a single call - they relied on the structure and safety of a consistent schedule. This meeting provided time for new instruction, concept review, screen sharing to help students navigate online tools, and offering follow-up opportunities for one-on-one support.

At the onset, the biggest struggle with some of my students was to establish the concept that school was still happening. It was important to help them overcome the mindset that despite the fact school looked and felt different, it was still school. Thankfully, with interventions that included countless calls and emails to parents, immense support from administration, personal home visits to offer technology support, the support of our school social worker, and more, I was ultimately able to interact with *all* of my

students. I was able to engage with them in an instructional manner that created the greatest benefit. These students learned that school is not defined by location; school can be fluid and learning can happen anywhere, especially when they are given the appropriate tools for success. Students came to accept and understand they could enjoy interacting and learning with teachers and peers through online learning. However, I am certain they are all still anxious to experience school again in the traditional sense.

### **Administration (Nathan Harrison & Michelle Tanner)**

For administration, this was not a simple time. There were issues of student access, resources for teachers and students, driving materials to and from student homes, and organizing the increasingly complex schedules of students and staff. Meetings became much more frequent via calling or videoconferencing and Zoom fatigue (Degges-White, 2020; deHahn, 2020) became a very real strain on staff and students. For administration, there was an unpleasant disconnect from students; everything was filtered through teacher interactions rather than being able to visit students in the cafeteria or the classroom. Furthermore, students faced a steep learning curve in transitioning to fully online learning which was followed by a steep dive in their morale and motivation.

One of the most unexpected challenges was a sense of passionate concern, sometimes verging on paranoia, that ran through the school community, including at a surprisingly high level among staff, which created unique and complex challenges - one example was the discussion of the use of face masks for those in the building. Some individuals advocated for the use of face masks for safety and others were against their usage, due to the loss of visual communication. Neither group seemed satisfied with the administrative response. With ever-shifting information, opinions, and needs, there was a messy complexity of ongoing changes and challenges that administration faced daily throughout the school dismissal.

Despite the challenges, there were many successes. Online, remote learning happened, and, for those that participated regularly, the learning was held to a high level. We implemented adapted grading scales to focus more on the learning happening during an unusual time rather than traditional grades. Staff adapted to new situations, teaching approaches, and digital tools with amazing success. Most of all, the staff and students demonstrated perseverance and flexibility in light of a very stressful and unusual time.

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### **Lessons Learned and Moving Forward**

The first lesson we want to share from this is that successful online and distance learning is possible with D/HH students of all ages, although it requires creativity and effort. Next, distance learning did not work as well for disadvantaged groups of D/HH students, such as those in poverty or with disabilities best served in a resource classroom. Some students were best served by bringing them to the school for one-on-one learning or having an assigned para-educator for Zoom meetings. Third, students were more capable of utilizing digital tools than most expected (see appendix). Fourth, Deaf schools can utilize online learning, but it cannot take the place of in-person interactions between students and adults. The final lesson we want to share is that bilingual ASL/English strategies can be implemented with success using digital tools when teachers are mindful of their use and application.

In conclusion, there was one secondary teacher, Jeanna, who put it clearly during this experience: many people and students see school as a “noun” and not as a “verb;” it is a place to go, not a thing to do and we have learned that school is truly the opposite. It is an action and a process, and the form does not always meet the traditional definition of “school.” This paradigm shift is especially true for Deaf/Hard-of-hearing students, who need and deserve a creative approach to their learning, especially when a crisis happens.

## Appendix

### **Coronavirus School Dismissal: Lessons Learned by a Deaf Day School**

Digital Tools Utilized and Their Efficacy for Remote Learning with Deaf Students

Digital Tool	Tool Type	Preschool	Elementary	Secondary	Resource
<b><i>Content Management</i></b>					
Canvas	Learning Management System		1	2	1.5
SeeSaw	Content Management	2	2		
Google Classroom	Learning Management System	2			
Google Suite for Education	Office Products		1	2	2
<b><i>Video Conferencing and Recording</i></b>					
Zoom	Video conferencing	1.5	2	2	2
Loom	Picture-in-picture recording software		2	2	2
<b><i>Video Discussion and Posting</i></b>					
FlipGrid	Video discussion board			2	1

GoReact	Video feedback and discussion			1.5	I
<b><i>Multisubject Learning Tools</i></b>					
EdPuzzle	Video and question program			2	O
Quizlet	Online flashcards		I	2	I
Wizer.me	Worksheet creator, sharing site, and integration tool			2	
Smart Tech	Teacher Created Online Learning Games	2			
Boom Cards	Teacher Created Interactive Learning Games	2			
<b><i>Multisubject Content Provider</i></b>					
Waterford Upstart	Preschool Content	I			
<b><i>Mathematics</i></b>					
ST Math	Math Skill Puzzles		I	I	2
Prodigy	Math RPG		2	I	

IXL	Math Skill Practice		I	I	2
<b><i>English Literacy</i></b>					
ReadTheory	Reading and assessments		I		
RAZKids	Reading and assessments		I	I	I
Epic! Books	Reading and assessments	1.5	I		
<b><i>American Sign Language Literacy</i></b>					
Sign Stories App	ASL Stories	2	2		
Online Sign Stories	ASL Stories	1.5	I	I	I
<b><i>Non-Digital Remote Learning</i></b>					
Packets	Paper-based learning delivered to homes	1.5	I	I	1.5

Note: 0=ineffective, 1=moderately effective, 2=highly effective

# The Challenges that The DeafBlind Community Faces without Access During a Pandemic

Sarah E. Goodwin

## Sarah E. Goodwin

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COVID-19 impacted the DeafBlind community in many ways. For instance, those who rely on touch for communication modes such as Protactile (PT) or Tactile American Sign Language (TASL) experienced heightened oppression from able-bodied individuals who refused to communicate (through touch) or work with DeafBlind community due to social distancing (Daily Moth, 2020). Without direct access, DeafBlind individuals had to search for resources and push harder to get more information (Daily Moth, 2020). The lack of up-to-date information on COVID-19 posed real life problems for many DeafBlind individuals. For example, in the case of injuries, some went to the hospital not being aware of the social distancing requirements due to COVID-19. It was not until they arrived at the hospital that they found that the

hospitals were not providing interpreters due to social distancing rules, rather they were only providing Video Relay Interpreters (VRI; Daily Moth, 2020). However, the use of a screen created accessibility issues for those who rely on tactile interpreting which requires the use of touch.

## Characteristics of DeafBlind Individuals

Characteristics of DeafBlind individuals vary in that there are a wide range of hearing levels and visual conditions (Smith, 2002). For instance, an individual can be identified with mild, moderate, or profound hearing levels in addition to close vision, tunnel vision, blurry vision, or an identification of DeafBlind (Smith, 2002). The needs of each individual vary depending on their identification. In the case of a DeafBlind individual who is partially sighted and Deaf, American Sign Language (ASL) videos may be somewhat accessible depending on the background and presenter's clothes. Generally, the background needs to be a dark solid background. Moreover, the presenter needs to make ASL videos accessible by wearing a plain shirt in a color that contrasts with their skin tone (Thompson, 2020). Without a solid, contrasting shirt, a DeafBlind individual may be unable to read the presenter's signing due to similar colors blending together. On the opposite side of the identification spectrum, a DeafBlind individual who is almost (or fully) blind will not be able to access information in ASL videos, even with the addition of closed captioning. Due to the fast-paced nature and constant movement of the captions, captions are not always effective. Some DeafBlind individuals prefer to have a typed transcript including an image description of any images or video that remains in a nonmoving position and is more accessible (Nuccio, 2020). For instance, some DeafBlind individuals rely on braille to read information on the Internet, and social media tends to be image-heavy, which then becomes inaccessible to many DeafBlind Individuals

It should be clear that some DeafBlind individuals rely on a combination of ASL videos, typed transcripts, and/or braille. The braille system utilizes six dots to define a symbol for each letter (Tennessee Council of the Blind, 2010). Acquisition of braille tends to happen in grades 1 and 2, so an individual's ability to read braille depends heavily on when they learned it and how often they use it. Furthermore, braille requires that an individual be able to access one line of one to two sentences at a time before moving onto the next line which means that DeafBlind individuals need extra time to read compared to their sighted peers. While some use braille, other DeafBlind individuals may prefer to rely on a listserv; a system of email messages where information or topics are shared and discussed in a nonmoving, text-based, accessible manner for DeafBlind individuals (Thompson, 2020). One instance of a listserv via email messages such as Google Groups which seems to be a good communication system for reaching out to DeafBlind individuals (Thompson, 2020). As listed above, there are different types of resources available to make information accessible to the DeafBlind community.

### Equal Access on the Internet

While the use of the Internet has served as a lifeline for many people, it has posed multiple problems for many DeafBlind individuals. Press conferences, the news, and weather updates continue to be inaccessible for DeafBlind individuals as many "accessibility protocols" require that an individual have auditory or visual access. Thus, DeafBlind individuals often miss out on "accessible information" and feel that they have to fight for equal access to information that is shared through the use of technology (Nuccio, 2020). The COVID-19 pandemic that began in March 2020 served to further highlight the inaccessibility of press conferences. For instance, many of the news outlets shared information via video, some with and some without the use of an American Sign Language (ASL) interpreter. However, many of these videos did not include an accompanying typed transcript for DeafBlind individuals to read. Additionally, transcripts often did not include image or video description. The DeafBlind community continues to be an afterthought for many media outlets.

### Equal Access in a Pandemic

COVID-19 thrust most of the world into a pandemic response. News outlets, social media, and e-mails were flooded with updates on the virus, recommendations for social distancing, and warnings from those in healthcare. As mentioned above, many of these updates were shared via videos without transcripts, which left DeafBlind individuals out of the loop (Nuccio, 2020). Some of us in the community were unaware of what had been happening in many parts of the world in regard to COVID-19 (Nuccio, 2020). DeafBlind

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individuals are often left out of the loop due to the lack of accessibility and tend not to receive information or news for at least 24 hours (Thompson, 2020). DeafBlind individuals often felt frustrated that they continue to get information or news last due to the lack of transcripts on the Internet. Often, it is not until someone requests a transcript (and then another individual volunteers to write a transcript) that accessibility is finally created for the DeafBlind community. This process requires time, and by the time it becomes accessible, the information tends to be outdated and newer information is already being shared. The urgency of having current information during COVID-19 was felt by every American, and that urgency was also felt in the DeafBlind community. Every video and every news conference that is posted online needs to be posted with a typed transcript made available immediately in order to avoid any delays in information being shared with the DeafBlind community (Nuccio, 2020).

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## Equal Access and Law

Such inaccessibility is in violation of the Rehabilitation Act of 1973, which states that all communication modes, including tactile sign language (Tactile American Sign Language or Protactile) and typed transcripts should be provided to the DeafBlind clients (U.S. Department of Justice, Civil Rights Division, 2020). Decisions made by able-bodied individuals as to what accessibility means in the era of social distancing has had a significant impact on DeafBlind individuals who rely on touch for communication (Daily Moth, 2020). One such impact can be seen at Gallaudet University, where a few DeafBlind students' requests for tactile interpreters were rejected (Daily Moth, 2020). This rejection meant they were unable to continue their education as the sudden shift to virtual learning meant their classes were no longer accessible to them without a tactile interpreter (Daily Moth, 2020). The fight for equal access in an Internet age is far from being complete for the DeafBlind community.

By law, DeafBlind individuals should have equal access to social media, Internet and in-person services (U.S. Department Justice Civil Rights, 2020). We have become such an advanced society that there is no longer an acceptable excuse for excluding the DeafBlind community. Advances in technology make accommodations such as a listserv or transcripts simple to provide. Technology is no longer the barrier, rather it is humans who continue to delay such accommodations from becoming the norm. Rather than solely catering to the sighted,

able-bodied communities, a system needs to be developed where every single citizen can be informed of updates at the same time regardless of any barrier(s) and/or identification(s) they may possess. After all, are we not a nation that declares, "All for one, one for all?"

## A Virtual Visual Pedagogy: 3-D becomes 2-D

Andrea D. Alford, Frances F. Courson, Johnny Hill, & Megan B. Wimberly

### Andrea D. Alford

Andrea is a second-year doctoral student at Lamar University. She earned her Master of Science in Deaf Education at Texas Woman's University and Educational Administration from Lamar University. She is currently a deaf education teacher at a public high school. Andrea has a total of 17 years of experience teaching deaf and hard of hearing students in kindergarten through high school. Her research interests include cognitive development of deaf and hard of hearing children, ecological influences on child development, and deaf education administration.

### Frances Flowers Courson

Frances received her undergraduate degree in Deaf Education from the University of Montevallo. She earned her Master of Science in Deaf Education at Texas Woman's University and is currently a second-year doctoral student at Lamar University. She is a nationally certified interpreter, currently teaches elementary Deaf children

Deaf and hard of hearing (DHH) teachers and American Sign Language teachers (ASL) were burning their candles at both ends searching for effective tools when switching to online platforms. Home was where the learning occurred during COVID-19 instead of in classrooms. (M. Wimberly, personal communication, 2020). The new challenges for both teachers and students alike included learning how to use many different platforms such as Zoom, Google Meet, and Microsoft Teams, and how to incorporate each one in their instruction. For virtual learning, teachers would create additional tutorials using manual communication or ASL, to teach students explicitly on how to use the various learning platforms. Teachers had to become more creative with technology to provide digital resources, not only for the students but for their family members to assist, if needed. For example, DHH teachers would create video tutorials by recording themselves explaining in ASL while simultaneously showing how to utilize the platform with the virtual platform on the computer screen. The teachers would be seen in a screen share on Zoom or in a bubble on Loom explaining what to do using ASL for the particular platform. Teachers then would send the video to ASL interpreters to add voice interpretation, if needed. The voice interpretation was an add-on for those non-signing/non-fluent signing family members who needed auditory access. DHH teachers were putting in double time to ensure accommodations were being made for both the students and family members.

A sudden change forced by the COVID-19 pandemic was that schools had to switch from a face-to-face three-dimensional (3D) learning environment to a virtual learning two-dimensional (2D) platform with a short notice. Students learning in 3D were able to have full access to tangible classroom materials and interact with peers and instructors in real-time. In addition, 3D learning allowed deaf students to gain others' attention through vibrations, such as stomping their feet, tapping the desk, and tapping shoulders. Students learning in a 2D environment had to learn how to adapt to receiving content and instruction

virtually through a computer screen; such learning included teachers preparation and implementation of the new online learning platforms. In addition to learning in 2D, other needs such as internet access, accessibility of the academic content, and addressing students’ digital skills had to be acknowledged.

Curriculum design and platforms were changed to make instruction and content visibly accessible for DHH and ASL students as these students rely heavily on visual access to receive content instruction during remote learning. Visual access for DHH students who are in the mainstream setting has been described in terms of the *accessible cone triangle* (Figure 1) with students watching the teacher, the materials being presented, and the sign language interpreter (Mather & Clark, 2012). However, most deaf students tend to predominantly use a visual channel with visually-based strategies such as purposeful eye gaze, visual readiness, attention-getting strategies, and hands-on activities. Some deaf and hard of hearing students may have some access to the auditory channel, but it is not fully accessible due to students depending on visual cues to understand spoken language. DHH and ASL students also experience an increased cognitive burden such as attention fatigue; this situation occurred as students divided their visual attention (Mather & Clark, 2012, Knoors & Marschark, 2020). With the remote challenges DHH children faced while transitioning to a new and unique learning environment, tools were needed that promote effective learning.

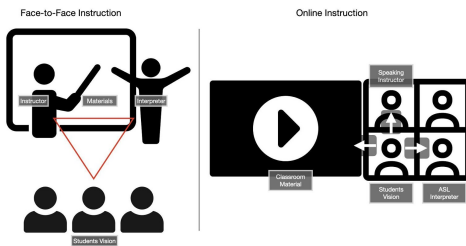


Figure 1: A diagram comparing the difference between face-to-face and online instruction (Hill, 2020).

### Johnny G. Hill

Johnny is Deaf and has been an instructor and entrepreneur in American Sign Language and Deaf Education for over ten years. He has developed ASL curricula and created resources for ASL instructors nationwide. He received his undergraduate degree from Utah Valley University and later received his Master’s degree in Sign Language Education from Gallaudet University. He was awarded the Master’s in Sign Language Education Award for his pedagogical innovation and aptitude in the field. He is currently a second-year doctoral student at Lamar University.

### Megan Bourliea Wimberly

Megan has been teaching Deaf Education for 9 years at the elementary level at the Louisiana School for the Deaf. She received her undergraduate degree from Louisiana State University and her Masters of Science in Deaf Education from Lamar University where she is currently a first year doctoral student. Her research interests are diagnosing processes and teaching strategies for deaf and hard of hearing students with non-apparent disabilities, intervention, assessments, language deprivation, and reading/writing strategies.

## Transitioning from 3D to 2D teaching

Teachers transitioning from traditional face-to-face, in-person learning, by using online tools and curriculum that is fully digital resulted in an uncomfortable learning curve for students and teachers alike. The experience was alleviated in part by the fact most students and teachers/professors had had most of

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their year to learn the nuances of students' personalities, learning styles, routines, and communication styles. The sudden change from a language rich 3D interactive environment caused DHH students to experience a lack of daily social interaction using ASL and/or direct spoken language with their peers and teachers. Mather (2005) also discussed DHH students' need for access to a 360-degree view of the classroom. Thus, when the classroom is transformed to a virtual format, the view changes to a 2D view causing readjustments to meet the needs of all learners. DHH children were impacted by having to learn through a 2D computer screen. DHH students are visual learners, thus teachers may have to be creative in how to make virtual learning interactive and hands-on to foster an optimal learning experience.

### Remote Challenges Faced

For students to learn efficiently in their home environment during remote learning, teachers acknowledged and addressed the unique challenges such as possible visual interruptions, language barriers, and accessing the instructional content. Teachers can attempt to keep distractions to a minimum within the classroom; however, there may be distractions in the home environment the teacher cannot control. Due to students being deaf, their sensory modalities are often reorganized in the brain causing enhanced visual processing abilities resulting in a wider attention span to access their environment (Dye et al., 2007). However, this can pose issues if there are additional occurrences within their learning space, causing the students to be unable to ignore the additional distractions during instruction. Therefore, for DHH students to be able to focus more effectively using their peripheral vision to access their learning environment, auditory and/or visual distractions would need to be reduced or even better, eliminated. While learning at school, DHH students

receive instruction by trained professionals who are typically familiar with the attention needs and are able adjust their attention within the structured classroom environment. This adjustment made by the teacher is using the DHH students' abilities to their own advantage. Figure 2 shows an example of what the classroom eye gaze would look like for a DHH or ASL classroom.

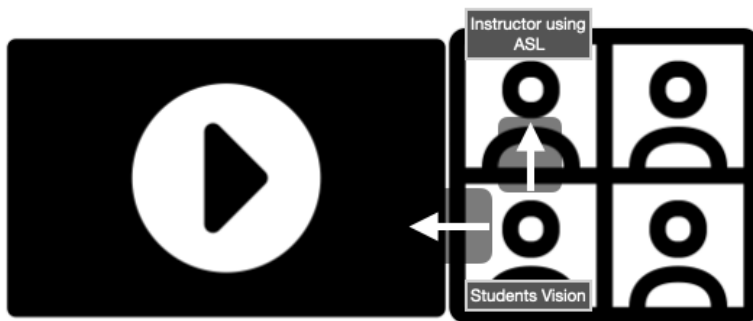


Figure 2: A diagram demonstrating DHH view of online instruction (Hill, 2020).

In addition to the compounding factors of virtual learning, sign language is often not acquired as a strong natural language in the home environment for some DHH students, which could potentially affect the acquisition of language that typically occurs after enrolling in school. This language delay could influence DHH students' academic and social language abilities (Calderon & Greenberg, 2011; Ocuto, 2019). Based on three of the authors' experience while teaching during the COVID-19 pandemic, this factor of language barriers for DHH students left many of them navigating the virtual learning environment on their own to figure out classwork and homework assignments, or contacting their teachers directly for clarification using signed communication.

McKeown and McKeown (2019) emphasized DHH students are faced with additional barriers to access the instructional content from the instructor when engaging in online learning. These compounded barriers consist of navigating the learning management system platform, understanding the course materials, and gaining access to communication and to the language of the content. Virtual instruction that occurs in a general education classroom with mainstreamed DHH students depended on live or pre-recorded lessons, with only subtitles, which in and of themselves were not sufficient for learning, especially for those DHH students with language delays.

Teachers often sought additional technology resources that included more visual aids to supplement and provide students access to the content and school curriculum resources. With teachers separated from

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school curriculum and resources typically available for lesson planning within their classroom, they relied on online resources and other colleagues to ensure alignment with state standards. Math intervention resources often were delivered by online third party sites such as Khan Academy and Dreambox, which were in turn interpreted and/or signed using software programs such as Loom for access (F. Courson,

personal communication, 2020). The authors experienced increased daily communication with their students using videophones, texting, or FaceTime due to asking for clarification related to the loss of internet connection from the online platforms. At times, the quality of the platform was disrupted due to the lack of availability of high speed internet.

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Some additional challenges DHH students and ASL students encountered while learning using the virtual platform was that they were not accustomed to acquiring new vocabulary using ASL in a 2D format. Williams (2012) advocates embedding vocabulary instruction within classroom (3D) activities such as cooking, arts and crafts, science activities, and other authentic hands on activities. Switching from routine 3D instruction to 2D instruction virtually, the students had difficulty understanding and imitating the teacher's handshape, orientation, and movement of the new signed vocabulary. Therefore, some DHH students who have language delays found acquiring the new vocabulary from a 2D orientation difficult due to not clearly being able to see how the signs were formed on the computer monitor. To conclude most students required explicit teaching of how to maneuver and use tools in the learning management system remotely. Some online tools were more visually-oriented than others which influenced the pedagogy of online learning, hence causing the transformation to a 2D platform.

### Learning Management Tools

Virtual learning management platforms also offered built-in tools such as video captions, screen sharing, chat boxes, hand-raising features, spotlights, and the ability to limit the number of participants on the screen. These tools were necessary to accommodate and ensure students have equal access to

instruction. At times classroom virtual rules had to be developed to ease this transition. By creating online communication protocols such as turn-taking, using the spotlight feature on the speaker, and limiting what is on the screen provided fewer visual distractions while providing better instructional access. It was critical that these features were used in a way to facilitate positive learning experiences and to provide accessibility for all students (National Deaf Center, 2020). In the next section, the following online tools will be examined: Zoom, Loom, Google Meet, FlipGrid, Keynote, Nearpod, and Google

Slides. While each platform had unique features that supported visual learning, there were benefits and limitations for each platform.

### ***Video Conferencing Platforms***

Video conferencing platforms became the mainstay for direct instruction due to their simple-to-use features and low network bandwidth requirements. Students were able to join their classes through a shared link to meet up with their teachers and classmates. This allowed students to have visual access to instructors and peers in live or pre-recorded formats. Due to COVID-19, Zoom offered educators free access to premium services such as unlimited times for group meetings, cloud recording, and allowing increased number of participants. Zoom incorporated features such as screen sharing, which allowed teachers to share their screen and provide access to PowerPoints and a whiteboard to model writing instruction. Breakout rooms allowed the teachers to work in small groups to provide differentiated specialized instruction. Visual tools were beneficial for DHH and ASL students, alike. Zoom allowed screen recordings to be shared with students at a later time for review of material, or for students lacking access to high speed internet needing to view videos at a later time. During COVID-19, Zoom did not provide free automatic captions at the time.

Google Meet's G Suite for Education was another platform for video communication used during COVID-19. Google Meet provided encrypted connections and was often the preferred platform of schools because of its security settings. Google Meet offered automatic captions which were computer generated; however, the accuracy rate was only good when the speaker was near the microphone and the background noise was low. In noisy environments, the accuracy rate of the captions was lower. Having these conferencing platforms allowed ease of communication during the instructional process rather than the students working on their own with an asynchronous learning platform.

### ***Screencasting Tools***

Screencasting tools are digital video recordings which allow instructors to record part of the screen and the speaker simultaneously like a screen capture video, which is a great way to model and guide learning. Loom was a helpful screen-casting tool used by instructors and interpreters allowing user-friendly recordings to be embedded into documents, videos, or presentations and shared with students. Loom was effective for asynchronous teaching as teachers were able to create training videos, presentations, and assessments, and to provide teachers and interpreters with notifications when students viewed the videos. Loom's basic plan was provided free to educators during COVID-19 and allowed the teacher or interpreter to screen- and camera-record, provide comments and reactions, and to add viewer comments (Loom, 2020).

Some of the limitations noted with Loom were that it only works on devices such as Google Chrome (a cross-platform web browser) or using Google Chrome extensions (small software programs that customize the user's browsing experience). Additionally, editing options were limited to the trimming of

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videos. The embedded videos had a limited number of sizes to choose from and at times limited the view of the signing. This limited feature was frustrating to presenters who used ASL, which required the signer's frame to include the upper body and hands (Common Sense Education, 2018). Both the video conferencing platforms and screen-casting tools provided great support as tools for ASL teachers and teachers of DHH students.

### ***Social Learning Platforms***

Social learning platforms are online programs used to supplement video conferencing instruction or as a part of the digital online curriculum. Social learning platforms included FlipGrid, Kahoot, and Nearpod. Flipgrid allowed instructors to create a grid, known as the classroom, or community. For each grid created, the instructor was able to add discussion topics with students easily recording and submitting their videos. Several benefits of this resource were that it allowed students to share their ideas, stories, and to work in a user-friendly format. The features of Flipgrid included a whiteboard, adjustment of video styles, including texts, emojis, and inking, further creating appeal for their student recordings (Flipgrid, 2020).

The lack of administrative settings was frustrating at times for both teachers and DHH and ASL students while using the virtual platform. For example, some students got carried away using stickers and filters with their recordings, and this option could not be blocked or limited by the administrator. In addition, some instructors found embedding the code from Flipgrid into a learning management system for their school challenging. Students also shared frustrations with their inability to log into Flipgrid and download their previous videos (Flipgrid, 2020). Also, if the DHH student was in a grid with mainstreamed students who did not sign, this posed an accessibility issue. Therefore, it was critical the DHH teacher ensured the accommodations were met during instruction using an alternative such as Facetime or Zoom to interpret all of the Flipgrid posts.

Nearpod is an instructional platform which merges formative assessment and dynamic media for collaborative learning experiences (Nearpod, 2020, par. 1). Instructors provided students with a code to join a customized learning experience including slides with a variety of activities offered by Nearpod. Such lessons included interactive lessons with tech-enhanced materials; for visual learners, Nearpod offered a discussion board where the instructor posted a question, and students were able to respond using texts, images, and GIFS (Nearpod, 2020).

The lessons were created and conducted live in the classroom and were self-paced, allowing students to complete the assignments at their own time. This feature allowed instructors to gain insights into students' understanding through progression reports. One issue that occurred during live lessons using Nearpod and Zoom on Chromebooks was the students struggled to see all of the screens at once when there was more than one student present. When a teacher worked one-on-one with a student, the student screen-shared and the teacher facilitated and led the student throughout the lesson. Nearpod states their platform can be easily integrated with any instructor's learning management system such as Google Classroom, Canvas, Schoology and more (Zoom, 2020). Nearpod is a great resource for DHH students to work from their devices, such as using interactive polls to check the class understanding and quiz games to check their own knowledge during virtual learning which promotes engagement.



With many resources at hand, as discussed previously, teachers were constantly searching for effective tools which provide optimal access for their students. Each resource aforementioned has its benefits and shortcomings, however now teachers can feel at ease knowing there are many virtual resources to choose from.

### **Discussion**

Deaf and hard of hearing children, their teachers, and family members were faced with an unprecedented recent global pandemic. Fortunately, teachers were able to adapt by using technological advances which provided some ease to the transition to virtual pedagogy. Instruction for DHH children was able to continue despite the pandemic, as teachers sought new ways to ensure educational accountability. They were discouraged at times but did their best to not allow the pandemic to prevent them from continuing to provide access to instruction for their DHH and ASL students. Educators took additional responsibility to navigate the latest tools through this new online climate of learning. Transitioning from 3D to 2D learning required flexibility on the part of educators and students, alike. The family members of the DHH students also faced the challenge of supervising the education of their DHH children at home. There is a need for further research using surveys or interviews with family members on their perspectives during the virtual learning process which can give teachers insight into how to improve accommodations and instruction with their students.

Teachers were left with little time to transition students to this type of learning, yet found themselves teaching and training students, and their family members, on the art of online learning. A fair warning (not possible under the circumstances) and prior preparation for online learning might have improved the quality of instruction. Nevertheless, teachers of DHH students rose to the occasion in less than optimal conditions with perseverance and creatively used online learning management systems and platforms to make learning more visual and appropriate for DHH students. Only when this chapter is written in history will one know the full impact of this impromptu style of teaching and learning.

## Teaching ASL During A Pandemic: ASL Teachers' Experience with Transition from Face to Face to Online

Beverly Buchanan, Sean Hauschildt, Joseph Mann III

### Beverly Buchanan

Beverly is currently a full-time doctoral student and a faculty at the Department of Deaf Studies and Deaf Education at Lamar University. She was born in Nova Scotia, Canada. Beverly graduated with a bachelor's degree from Gallaudet University (1986), a master's degree in Deaf Education (1994) from McDaniel College in Westminster, Maryland, and a master's degree in Sign Language Education (2017) from Gallaudet University. She has established the Deaf Way Student Scholarship fund at Southwest Collegiate Institute for the Deaf, Big Spring, Texas, and at Gallaudet University, Washington, D.C. Beverly established Deaf Education without Borders, an international non-profit humanitarian organization focusing on the education of Deaf people worldwide. Current research interests are Sign Language Documentation, Endangered Sign Language, Sign Language Linguistics, and Sign Language Shift.

This three-part video series explores the challenges and accomplishments of three American Sign Language (ASL) teachers and their experience with a rapid transition from face to face classroom to a technology-based online ASL class due to a pandemic situation. Three teachers will share their tools and reflections related to six different levels of ASL classes. Results showed that the teacher's continuous visual guidance was needed in addition to mentoring and instruction when teaching online. Teachers noticed that they preferred to be face-to-face in-class, rather than off-site, providing online instruction. Some of this preference was due to more accessible classroom settings utilizing an U-shape seating versus a computer screen. Though online teaching in a time of crisis cannot be avoided, this study concludes that implementing 100% online teaching for ASL students is still limited in its effectiveness as a viable option for regular instruction. This article shares the importance of additional research for ASL teachers on how to effectively plan for online teaching with tools, innovative ideas, strategies, and the ability to develop multimedia skills in a short timeframe. Also important to study is the ability to pivot between in-person and online course instruction in an emergency situation as well as exploration of hybrid online and in-person instruction options.



Click the video above to view this article in ASL!

The Department of Deaf Studies and Deaf Education (DSDE) at Lamar University has a cultural and linguistic curriculum for students to learn ASL. The university is in Beaumont, Texas, approximately 90 miles east from Houston. DSDE offers numerous opportunities for a wide range of educational and cultural experiences on the bachelor, master and doctorate levels. Students are prepared to become ASL teachers and interpreters, teachers of deaf children from early childhood to secondary levels, as well as university professors and administrators. The DSDE department develops partnerships with state schools for the deaf, mainstream programs at public schools, community colleges, universities and research labs—all in order to give students a state-of-the-art curriculum and rich internship experiences.

The DSDE Bachelor of Arts (BA) in ASL at Lamar University has three different tracks: ASL Advocacy, ASL Teaching and Interpreting. The program offers students opportunities to seek careers as a sign language interpreter, a certified teacher, advocate, a speech-language pathologist, a post-secondary foreign language teacher, and/or a social worker. ASL courses enable students to acquire competence in both expressive and receptive ASL skills as well as familiarity with the literature and culture of the Deaf community. The three authors believe ASL teaching and interpreting are considered to be two of the best and most meaningful jobs in the United States. DSDE offers ASL courses from levels 1 to 6 and they offer scaffolding linguistic learning experiences for students to master their sign language skills. Students work closely with our deaf and hearing faculty in an authentic cultural and linguistic setting.

During the spring semester of 2020, there was a pandemic from the COVID-19 virus that caused numerous shutdowns, cancellations, and changes in our lives, work, and schooling. In our situation, Lamar University announced that after spring break, all courses would be taught online and students would be sent home. As teachers, we were forced to abruptly change from face-to-face instruction, to online teaching with all our ASL and other DSDE courses conducted primarily in ASL. DSDE teachers especially faced challenges with this sudden change to online instruction due to teaching via the medium of ASL in a three-dimensional format and suddenly needing to adjust to teach in a two-dimensional format. Consequentially, they found themselves exploring uncharted waters with online instruction. This paper includes interviews of three instructors who shared their insights and challenges of the rapid adjustment to online instruction.

### Sean R. Hauschild

Sean Ryan Hauschildt, MSc is a faculty member of Lamar University's Deaf Studies and Deaf Education Department. Before his time at DSDE, he taught ASL and Deaf Studies at community colleges and universities.

He attended Gallaudet University for his undergraduate degree in Communication Studies before he was off to the university of Bristol in the United Kingdom. He studied under the guidance of Dr. Paddy Ladd and received his master of science in Deafhood Studies.

Currently, his areas of research interest are: Identities, Indonesian Deaf communities, psycholinguistic, cognitive psychology and signed languages.

The interview questions will cover our positions as ASL teacher, including which course level(s) we teach, and a brief description of our teaching experience before, during, and after the COVID-19 pandemic. We detail the challenges that we experienced, which online tools worked the best for teaching ASL, and share three things that worked for us and three things that did not work well with teaching ASL online. Finally, we share online ASL activities we deemed effective from our experience and expertise.

### Joseph Mann, III

Joseph Mann is an Instructor of American Sign Language at Lamar University. He has worked for the department for five years and has been involved with other courses in the department. He is also involved with the evaluation of students' ASL skills. Outside of work, Joseph enjoys spending time with his family and friends.

### Beverly Buchanan

Beverly Buchanan teaches ASL 3 at Lamar University, Texas. She uses the True+Way ASL (TWA) curriculum - Level 3 that focuses on narrative skills and has students practice their skills that align with ASL linguistics such as surrogate, personification, non-manual signals and other features that are relevant to learning ASL. During face-to-face classroom sessions, students would sit in an "U-Shape" layout in the classroom and engage in ASL conversations, one-on-one conversations, and explore ASL activities. When teaching shifted online, there were a few major challenges. One was the students' home network were sometimes spotty and/or weak which would cause some static on the screen. Second, with as many as twenty-two students in a class now appearing on a zoom screen, it was not easy to facilitate a class with everyone's videos "on" as needed for ASL

instruction. Compounding the issue, students would frequently appear and disappear from the Zoom session due to network issues. Third, some students did not have a plain background, some would sit in front a window with a glare which would wash out their faces. Some would sit with people walking around in the background and some backgrounds were so "busy" that it caused excessive eye distractions. During the transition to online teaching, students had to learn about virtual classroom etiquette such as appropriate dress code, having a plain background, and adjusting lighting so they were visible without glare. One of the best tools to teach online was the TWA digital curriculum. TWA was easy to use on the Internet and the creation of homework assignments online was very convenient. For students' expressive assignments, we used the Go-React software. Both online tools were useful for online instruction especially during a time of crisis.

Now, Bev will share more details on three things that were successful and three things that were not. Successful experiences with shifting from face to face to online included the use of a digital curriculum; students being able to work independently; and including virtual exams. At the end of each unit, students take an exam using Go-React to show their ability to express an idea based on a prompt in ASL. The Go-React exam allows the instructor a 'live' review of the students' receptive & expressive signing skills. However, what was missing from the virtual format were authentic peer interactions in ASL; lack of eye contact and body language due to the 2D nature of Zoom; and the lack of an "U-Shape" layout seating as the Zoom platform arranged each video in "rows." Different activities were implemented in an attempt to replace the missing in-person interactions. One of the activities that students reported they enjoyed the most were filming a recruitment video for the Department where they shared their experience as a

student, including tips on the best places to eat on campus and study. Another activity that was a hit required students to do a storytelling project in ASL. This project focused on developing their signing skills with ASL surrogates, role shifting, non-manual markers and narrative skills using young children's books. The experience of shifting from teaching face-to-face to online instruction, we could have performed better if we had had some online resource training. Overall with this experience, we have learned how to navigate ASL instruction using online tools and we are prepared to shift to online instruction as our nation continues to grapple with the COVID-19 pandemic. Also, if the university needs to close again for any reason (e.g., inclement weather), students and teachers are better equipped to continue instruction as conditions reasonably allow.

### **Sean Ryan Hauschildt**

Sean Hauschildt has been teaching ASL at Lamar University since 2019. In the past, he taught ASL for ten years at the university level. He has experience using a variety of curriculums such as Learning ASL, Signing Naturally, Master ASL, and he currently uses True+Way ASL. Based on his teaching experience, he has been able to informally compare the different ASL curriculum available. He has observed some pros and cons in each one. In his current position, Sean teaches ASL levels 1, 2, 3, 4 using TWA and ASL Level 5 using Signing Naturally. He enjoyed teaching those classes until the COVID-19 pandemic began, which prevented him from teaching face-to-face. The university announced with little warning that all faculty had to shift their instruction to an online format. Since TWA was already online-based, Sean assumed that students could work independently online. As for ASL 5, students did not appear interested in learning through an online format as most of the Signing Naturally content information was in books and DVDs. Due to the printed materials being locked in the University offices, this class struggled the most with staying on track and practicing their skills. Sean attempted to upload videos from the Signing Naturally DVDs on Blackboard but ran into multiple technical issues. Meanwhile, continuing with TWA was convenient for both the instructor and students. Classes who used TWA did not encounter any issues with the exception of weak network signals and/or spotty internet access. For instance, some students live in rural areas and have no access to cellular service and often their satellite network signals were too weak to participate effectively in online courses. Additional challenges for Sean included the Zoom platform itself. With such large classes, the videos on Zoom screens were small, which became quite challenging to watch for hours on end. Admittedly, Sean struggled with the sudden shift to online teaching. Once the semester ended, he spent some time reflecting and trying to figure out how to improve this situation. With some time, he was able to become more tech-savvy and dialed into some features that allowed him to set up dual monitors to use with Zoom. Once the two screens were set up, the students claimed that they could see the PowerPoint and the instructor at the same time. In the past, he used one screen and the videos were small for students to observe on their end. With the dual monitors, students could see the instructor and the videos at the same time. The result was an improved motivation to learn. As for Signing Naturally, the most effective solution in the current pandemic (and for any future crises), the department will need to digitize their materials. As long as instructors have the right online tools, their teaching approach can become effective regardless of the instructional setting. If instructors are not familiar with online tools, it is likely that they will face some kind of struggle. Further research, or collaboration in the field, is needed to determine what tools work best for an online class. The courses also need to be redesigned to enhance sign language pedagogy strategies with Sign Language

Interpreters, Deaf Education teachers, and Deaf Advocates. Instructors who teach courses related to sign language, such as ASL linguistics need to ensure that their teaching materials are digitized. Further exploration is needed to identify an optimal platform for instruction via ASL as well as a backup plan in case Zoom crashes or is no longer available as an option as has happened with other video platforms in the past. Faculty in the field who teach ASL or teach via ASL should engage in advance preparations and further explore other online materials.

### **Lyman “Joseph” Mann**

Lyman “Joseph” Mann taught ASL classes at Lamar University during the Spring 2020 semester with ASL level 1, 2, 4 and 6 courses. He was used to the routine of daily classroom instruction. When COVID-19 hit, he shifted all of his courses from face-to-face to online. He did not have any prior experience with online teaching, resources, nor training. Online instruction was challenging and he found himself in survival mode until the semester was over. Among his online challenges included handling a large group of students on one screen as the students’ videos were often too small to be seen. Communication became a challenge as he was not able to adequately view their facial expressions and signing skills as there were too many faces on one screen to allow for proper focus and dialogues to occur. As for group work, the experience did not go well and he ended up having to gather everyone together in order to rehearse their signing skills. In his view, it would have been better if he had a smaller number of students as it would have been easier to manage on a Zoom screen. Less participants mean that each participants’ video will show up bigger on a screen. The more students that we have, the participants' videos on the screen appears smaller. Three things that were successful for his online teaching were: 1.) using TWA, 2.) Go-React, and 3.) the ability to practice signing skills with the assignments. Three things were not successful were: 1.) Inability to track the students’ progress with their signing skills due to the small videos on the Zoom screen, 2.) inability to observe students’ signing skills, and 3.) students often had network access issues causing them to appear and disappear during classes. Two of our best online activities were creative storytelling and sharing perspectives on two different cultures in our communities, Deaf and hearing, and how they are different.

### **Conclusion**

In summary, the challenges and accomplishments of online instruction were universally shared by three instructors from the same university during a rapid transition from a face-to-face classroom to online instruction. Due to ASL being a visual language, the articulatory space in front of the signer is used grammatically, topographically, and in depicting a real space. As a result, a course taught in ASL is not easily translatable to an online format because online tools may not offer the features needed to provide a similar language access as face-to-face instruction.

This phenomenon was likely not unique to Lamar University. Further research and information sharing is needed in order to shape a new perspective for ASL teachers on how to effectively plan online instruction. Discussion needs to be had regarding possible new tools, innovative ideas, and strategies so that it is ready for when we experience some kind of crisis. The three instructors all related that their greatest challenge was the lack of readiness, tools, and proper training in teaching ASL online. Future work will need to: (A.) address which online tools works best for ASL instruction, (B.) develop online ASL training

materials, and (C.) create a list of ASL activities that can be used online. Engaging in the above will better equip instructors to teach online utilizing ASL during a crisis and open up new avenues of exploration related to online or hybrid ASL instruction.

# Experiences of Doctoral Deaf Education Students with Virtual Learning in American Sign Language

David R. Meek, Katrina R. Cue, and Ju-Lee A. Wolsey

## David R. Meek

Dr. David R. Meek is a postdoctoral fellow under the mentorship of Dr. Matthew Dye in the SPaCE (Sensory, Perceptual and Cognitive Ecology) Center at RIT/NTID (Rochester Institute of Technology/National Technical Institute for the Deaf). He obtained his doctorate in Deaf Studies and Deaf Education from Lamar University. He received his Bachelor of Science in Deaf Education and a Master of Arts in Mild Intervention from Ball State University. Dr. Meek has 15 years of experience as a K-12 educator in Deaf Education, Special Education, working with students with various degrees of disabilities, and in Higher Education.

*At the time this paper was written, the novel coronavirus (COVID-19) did not exist nor was there a possibility of a global pandemic in anyone's minds. Thus, this information has aged somewhat in pointing out the advantages and challenges of virtual or online instruction. Also, some of the video conferencing platforms that were popular a scant two years ago are now obsolete and not widely used (e.g., Fuze). Likewise, video platforms that were not as popular two years ago are now common household names (e.g., Zoom). The information below was originally gathered in the context of deaf education programs for doctoral students; however, it has been slightly modified to be presented in the context of making research findings applicable to a broader population in the deaf education field.*

## Considering the Deaf Education Pipeline

There exists a shortage of people in the deaf education field at all levels, from those individuals training to be teachers to teachers in the classrooms and to the faculty who train those future teachers (Andrews, 2003; Andrews & Covell, 2007; Benedict et al., 2011; Johnson, 2004; 2013; Luft, 2019; Schirmer, 2008). Among the many reasons for the shortage, the top three factors are arguably the number of people needed compounded by the number of locations where those people are needed and the lack of easily accessible educational training programs (Luft, 2019). One proposed solution to such a dilemma is to strengthen the *pipeline* of deaf education and graduate more educators who are equipped to work in the deaf education field, as well as prevent further program closures (Andrews & Covell, 2007; Luft, 2019). However, the number of deaf education teacher preparation programs and/or students are decreasing at a number that has now been declared a national crisis level by the

Council on Education of the Deaf (CED, n.d.), a national accrediting body consisting of eight major national organizations dedicated to the education of deaf students. As Luft (2019) pointed out, in 1985, there were 81 programs for deaf education. In 2019, that number had decreased to 62 with more program closures on the horizon. The result is a projected deaf education teacher to student ratio of 144:1 (Luft,



2019). Reasons behind program closures often include higher operating costs and dwindling student enrollment (Righter, 2019).

As a whole, deaf education training programs tend to be specialized programs that are available at fewer locations compared to traditional teacher training programs. According to the Deaf Education web site (2019), only 30 states and the District of Columbia offer deaf education teacher preparation programs. Of those 30 states, only 24 plus the District of Columbia offer master's degrees. Then only ten offer doctoral degrees in or related to deaf education<sup>1</sup>. Potentially compounding matters is the fact that many deaf education positions require graduate degrees which are typically attained at a later life stage. The National Center for Education Statistics (NCES, 2020) shows that between 2000-2019 for the 25-29 years old age group, only 39% attained a bachelor's degree and only 9% obtained a master's degree at a minimum. Furthermore, at the age of 28, only 12% had earned a master's degree or higher (Grotsky & Doren, 2015).

The result is a further narrowing of proximity and accessibility for students to pursue advanced degrees in deaf education. Thus, beginning a typical doctoral deaf education program often requires a physical move to be closer to the program of study and necessitates sacrifices on the student's part in terms of time, work commitment, family obligations, and economic opportunities lost while studying (El Mansour & Mupinga, 2007).

These concessions may be difficult to make depending on student age, life stage, and/or financial status (O'Donnell & Tobbell, 2007; Polson, 2003). As a result, the above barriers have often prevented people from pursuing degrees in deaf education and has necessitated an "evolving curriculum" that has shifted with the times and unique needs of the student population (Andrews & Covell, 2007). It was wondered if increased virtual education opportunities could potentially address the aforementioned issues related to securing the deaf education *pipeline* and increasing its output. At Lamar University in Beaumont, Texas, the Deaf Studies and Deaf Education program first started a hybrid program of providing courses in a blended online and face-to-face format utilizing Adobe Connect in 2007 (M. Ausbrooks, personal communication, February 4, 2018). Gallaudet University in Washington, DC previously experimented with providing course content simultaneously to a group of in-person students and online students beginning in 2012. In examining current trends in education, it is also prudent to consider its origins and purpose.

## Katrina R. Cue

Dr. Katrina R. Cue is a graduate of the Deaf Studies and Deaf Education program at Lamar University where her research and publications focused on Deaf epistemology, Deaf Ecological Systems, D/deaf terminology, and the EHDI system. She obtained her master degree in Secondary Deaf Education from the Rochester Institute of Technology and taught high school English at several different schools nationwide. Currently, she resides in the Denver metro area where she works closely with the Colorado EHDI system as well as other organizational development projects through her consulting business, Ktquiet LLC.

<sup>1</sup> Only Lamar University, Gallaudet University (admissions on hold until Fall 2022), and Columbia University grant doctorate degrees specifically in deaf education. The other universities' degrees are in related fields such as special education, educational leadership, educational psychology, audiology, or general education with a concentration in deaf education (Deaf Education Website, 2019).

## Ju-Lee A. Wolsey

Dr. Ju-Lee A. Wolsey is an Assistant Professor in the Deaf Studies program under Interdisciplinary Studies at Towson University. She obtained her doctorate in Deaf Studies and Deaf Education from Lamar University in 2018. Originally from Ontario, Canada, she earned a Bachelor of Science in Psychology from Madonna University, a Master of Rehabilitation Counseling from Bowling Green State University, and a Master of Science in Professional Studies with concentrations in Human Resource Development and Project Management from Rochester Institute of Technology. Dr. Wolsey has worked with Deaf, DeafBlind, and hard-of-hearing children and adults in private and public sectors in schools and the community in various capacities as a counselor, instructor, intervenor, program coordinator, and assistant director. Her research interests include accessibility, advocacy, mentorship, resiliency, Deaf identity development, American Sign Language/English bilingualism, and qualitative research that relate to the lives of Deaf, DeafBlind, and hard of hearing children and adults.

### The History of Distance Education

“Online education” is not a new concept in and of itself. Historically, distance education has enabled a greater number of students to be able to participate in the education process from anywhere, especially at the higher education level. Before the advent of modern computers and Internet technology in the late 1960s (Andrews, 2019), distance education was done via correspondence courses through the mail (Archibald & Worsley, 2019). In fact, university correspondence courses have their origins 170 years ago in Britain (Petersen’s, 2017). One of the limitations of doing correspondence courses was that they could not be delivered through American Sign Language (ASL). This limitation was a disadvantage for those individuals who depended on visual access for both communication and access to education that is delivered in ASL.

In the 1960s, college campuses began exploring ways to connect students through intranets (locally connected computers; Petersen’s, 2017). Independent companies began experimenting with online education campuses, although they were not affiliated with any traditional “brick and mortar” universities (SmartBrief, 2020). In 1999, Jones International University became the first online university to receive accreditation (Chuang, 2015). In 2002, the Massachusetts Institute of Technology (MIT) began providing lectures and course content online (Petersen’s, 2017). Other universities quickly followed suit evolving from offering a few courses online to offering full-fledged online degree programs alongside traditional face-to-face degree programs. For deaf and hard of hearing students, their access to online courses in their native language of ASL was limited until technology could “catch up,” so to speak.

Technology began to catch up thanks to the “dot-com” or “tech bubble” era of 1997-2001 and provide access for customers and businesses (Rexaline, 2017). Pioneers in the field improved access points for person-to-person communication. Sorenson (2020) introduced the videophone (VP) in 2003 as a standalone equipment that required a separate television and strong Internet connection to operate effectively. Skype was also established in 2003 as a service providing voice calls over the Internet, but it was not until the later part of the

decade that video calls became possible (Whent, 2012). Adobe Connect was branded in 2003 (as a PowerPoint presenter plugin)<sup>2</sup>; however, video conferencing was not available for another few years (Byerly, 2017). Video conferencing access during this time was limited to powerful desktop computers or standalone equipment. After the tech bubble burst, the next hot trend was “Web 2.0,” which especially valued user interaction with the Internet, social media, and content creation (Hosch, n.d.). Along this vein, the nascent technologies required for group video conferencing began to develop.

Apple introduced FaceTime in 2010, which was around when other companies began to develop the ability for one-on-one video conferencing on mobile devices (Sarkar & Shah, 2010). Zoom was founded in 2011 but its software platform was not launched until 2013 (Konrad, 2019). Additionally, its software did not become widely popular until the COVID-19 pandemic in 2019 that necessitated the switch to virtual learning (Bary, 2020). Google Hangouts debuted in 2013 (Sottek, 2013,) and *Appear.in* came along the same year (Whereby, n.d.). *Fuze*’s video conferencing capabilities happened around 2015 (Fuze, 2020). With choices for group video conferencing, it became possible for online video conferencing via ASL to materialize at last.

**Online education today.** With the advent of technological advances that have allowed for online education (e.g., high speed internet connections, learning management systems [LMS], and video conferencing), more students are able to participate in their education remotely while still keeping their jobs, current residences, and balancing other aspects of their lives (Pitcher et al., 2000). Times have changed, and many universities and colleges are offering students the opportunity to work toward a degree online rather than relocating and/or physically attending an institution 100% face-to-face.

To address the impersonal nature of an online-only education, some programs offer hybrid models blending the benefits of online and face-to-face formats. In short, the technology exists, online education utilizing video conferencing via ASL is happening, and it addresses a critical need in the field (Luft, 2019); however, its effectiveness has yet to be measured. Long et al. (2011) compared on-campus and online sections of the same course to see how students

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<sup>2</sup> Adobe Connect was developed as Macromedia Breeze (Byerly, 2017). It is unknown if it had video conferencing ability prior to its acquisition by Adobe in 2006.

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fared and found that online students outperformed face-to-face students. Deaf and hard of hearing students showed greater gains in online versus in-person courses. They also found that online courses with increased “interaction” led to greater course satisfaction. Long et al. (2011) acknowledged that it is difficult for deaf students to follow the happenings of a traditional classroom with multiple learning tools used simultaneously in terms of lectures, PowerPoints, interpreters, and other students. Online courses provide more of an equitable platform where communication is not likely to break down and the “effectiveness of online interactions for facilitating direct communication between hearing and D/HH students” (Long et al., 2011, p. 15). However, the online courses that Long et al. (2011) studied did not use video conferencing.

Traditional online courses (such as those studied by Long et al., 2011) were often asynchronous and virtual. Video conferencing changed that and allowed for synchronous courses, as well as more opportunities to interact face-to-face. Mader and Ming (2015) comment on video conferencing as bringing together students from varying geographic regions, allowing for learner-centered opportunities, developing leadership skills, the creation of learning communities, and accommodating those with different learning styles. In developing their hybrid program, the selection of a video conferencing platform was significant in terms of the cost, capabilities, and suitability to program needs. Learning activities were often designed with the understanding that students would need to practice video conferencing beforehand and test the different features of the chosen platform on-site where trouble-shooting could occur. In other words, students were required to become familiar with both the technology and software before first use.

Mader and Ming (2015) provided a set of recommendations for video conferencing success including familiarizing students to one another prior to their first meeting; having the moderator of the videoconference be prepared with an agenda; clarifying the roles and responsibilities for all participants in advance, having groups of a manageable size, and being mindful of time management. Perhaps more importantly, the authors suggested that all participants ensure technological issues be minimized by making sure all have Internet connections; all have installed the necessary software/plugin; all have practice using the software; all have contact information for others in the video conferencing group in case of technical glitches; and all have access to technical support personnel (Mader & Ming, 2015). Although not specifically targeted toward ASL video conferencing, the authors’ advice to be mindful of

lighting and camera positioning is important all the same. However, their advice is to “limit movement of participants. Quick movements result in a jerky appearance” (Mader & Ming, 2015, p. 115) is incongruous with the goals of ASL video conferencing where movement of all participants is the norm and needs to be clearly visible and understood for all.

Despite its visual nature, it is clear that the origins of video conferencing was designed to provide synchronous course delivery by closely mimicking a traditional classroom experience as much as possible. Even designing deaf education classes directly pertaining to future work with a visual and tactile population did little to ensure visual or ASL-friendly practices. For instance, Johnson (2013) visualizes four different “levels” of deaf education teacher training where level 1 deals explicitly with online teaching. According to Johnson (2013), in Level 1, courses could occur online with high-speed Internet access, webcams, and video conferencing software. Courses such as practicum or student teaching would need to develop methods for observation. However, he also added, “students who require a sign language interpreter in order to participate in a class may be difficult to serve within a Level 1 “virtual” course setting” (Johnson, 2013, p. 443). The reason is because the Level 1 virtual course is largely dependent upon auditory input and vocal output in its envisioned design. Again, the quality and feasibility of ASL online video conferencing courses is questioned with little precedent for visual applications. Knipe and Lee (2002) researched the quality of teaching and learning via video conferencing among online courses. According to the authors, the benefit of video conferencing is to allow for greater reach by an expert, e.g., a professor being able to teach a greater number of students compared to a traditional classroom (Knipe & Lee, 2002). It was pointed out that there have been disagreements about whether it is best for a large-scale class or for small groups. Deaf education teacher preparation programs serve a low-incidence population; thus, classes are small in nature. In addition, the nature of ASL does not lend itself well to a large group format unless the content delivery was designed to be delivered “one-way” (e.g., as in a lecture with minimal audience participation).

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In situations where video conferencing occurred in Knipe and Lee's (2002) study, its effectiveness and time-saving measures were questioned due to technical difficulties and distractions. They cited studies that, "seem to concentrate more on the practical advantages that the medium has, rather than focusing on the quality of teaching and learning" (p. 302). A survey was sent out examining pedagogy, cognitive outcomes, learning to learn, and quality of teaching and learning. It was found that face-to-face students scored higher in all areas compared to their online counterparts mainly due to the spontaneous conversations occurring naturally due to a physical presence (Knipe & Lee, 2002). The physical proximity for group work and presentations were also cited as advantages. Meanwhile, online students felt that they received more instructions and course notes, mainly due to technological issues (Knipe & Lee, 2002). The survey also reported that online students experienced feelings of isolation and lack of participation (Knipe & Lee, 2002). The authors cautioned that any deficiencies in the outcome of the online students' performance was not due to video conferencing as a medium. Rather, there were confounding factors such as technological issues, relationship between student and faculty, and student engagement (Knipe & Lee, 2002). Effort and care must be taken to actually develop a learning environment and community online.

The literature cited thus far mainly deals with video conferencing as a synchronous course delivery method or deaf and hard of hearing participation in general non-video conferencing based online courses. Clearly, the application of video conferencing technology featuring ASL as a centerpoint is still somewhat of an untested idea. All of the benefits for online instruction certainly has implications for the current state of deaf education teacher preparation programs (Johnson, 2013). It has potential in addressing deaf education teacher preparation program shortages in the U.S. (Benedict et al., 2011; Luft, 2019; Johnson, 2004; 2013; Schirmer, 2008). The fact that

technology has reached the point where it is possible to hold video conferencing classes based entirely about ASL is novel.

Also worth noting is the fact that technology evolves rapidly and consequently, the technology-based articles reviewed here are possibly outdated (Knipe & Lee, 2002; Long et al., 2011; Mader & Ming, 2015; Pitcher et al., 2000). However, the non-technological implications of video conferencing as raised by the

above authors seem congruent with research findings as will be discussed below.

### Purpose of Study

The goal of this study was to begin collecting, comparing, and contrasting doctoral students' experiences relating to past and current course experiences, communication and technology access, faculty and students' sign language skills, course delivery, and elements of successful and unsuccessful video conferencing course meetings. A survey of doctoral deaf education students participating in courses utilizing video conferencing in ASL was a first step in examining the process. These perspectives were collected to better understand and support the ongoing refinements of the distance education process for faculty and students. The research team's hypothesis was that although technological advancements have enabled ASL users to participate in distance education via video conferencing, the same video conferencing technology also has an impact in the participation process.

### Methodology

#### Setting

The study took place at a medium sized public co-educational doctoral university in the south-central region of the United States (U.S.). At the time of the study in 2017, the university served approximately fifteen thousand undergraduate and graduate students, and was classified by Carnegie as a doctoral university: moderate research activity (R-3; College Consensus, 2020).

#### Participants

After receiving approval from the Institutional Review Board, participants were recruited via word-of-mouth, email, and a deaf doctoral students Facebook group inviting people to participate in an online survey. The sample consisted of current doctoral students, candidates, and graduates from the field of deaf education who have experienced courses taught via video conferencing using ASL. Of the twenty-two participants, most were female (n=14); eight were male. Ages ranged from 25 to 54. All participants were either currently enrolled in or graduates of doctoral deaf education programs in the

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U.S. Ethnicity breakdowns were as follows: 17 were white, two were Asian, two were Latinx<sup>3</sup>, and one was of mixed ethnicity. As far as hearing status, 14 participants identified as culturally Deaf<sup>4</sup>, five identified as deaf<sup>5</sup>, and three identified as hearing. Participants were allowed to select multiple communication modalities. Fourteen of the participants cited ASL as their preferred communication. The rest of the participants used a mixture of speaking and sign (4), Spoken Language (2), and other English-based sign systems (2).

## Materials and Procedures

The research team determined that a survey would be the best data collection tool for the study's purpose. They developed a set of 29 questions that included 24 closed-ended questions, 19 multiple choice questions, and five matrix questions. The survey focused on asking participants' experiences and perspectives while participating in courses utilizing video conferencing via ASL. The survey was distributed through snowball and convenience sampling. Interested participants received an electronic survey link to participate in the study online. They clicked "yes or no" to the consent button on the informed consent form online prior to completing the online survey through Survey Monkey. Participants were assured that all data would be de-identified and kept confidential. The online survey took no more than 30 minutes to complete. It remained open until a sufficient number of responses were received. Results were collected and analyzed. Participants were able to skip questions if they wished; therefore, not all questions have n=22 for an answer sample.

## Data Analysis

A quantitative approach was adopted for this project. Data was analyzed via descriptive statistics to determine percentages to doctoral scholars' experiences participating in courses utilizing video conferencing via ASL in the field of deaf education. When possible, open-ended responses were organized by themes.

<sup>3</sup> Latinx is a gender-inclusive way of referring to people of Latin American descent (Padilla, 2016).

<sup>4</sup> Capital D in Deaf refers to people who see themselves as a cultural and linguistic minority using a visual language regardless of their audiological status (Pudans-Smith et al., 2019; Woodward, 1972).

<sup>5</sup> Lowercase d in deaf refers to people's audiological condition of not hearing; may not view themselves as part of a Deaf community (Padden & Humphries, 1988; Pudans-Smith et al., 2019).



## Results

### Demographics of Participants

Results from the survey provided characteristics and experiences of 22 respondents who participated in courses taught in ASL via video conferencing. Participants' current class standing were as follows: 1st year (n=3), 2nd year (n=1), 3rd year (n=4), 4th year (n=2), 5th year (n=1), All But Dissertation (n=5), and Graduated (n=6). They attended two different universities in different regions of the U.S. that have deaf education doctoral programs; Lamar University or Gallaudet University. Participants participated in three types of doctoral programs such as face-to-face (n=1), distance learning/online only (n=1), and hybrid that includes both face-to-face and online (n=20).

### Characteristics of Video Conferencing Course Meetings

Characteristics and experiences of participants' video conferencing course meetings related to the the following as reported in the survey: (1) type of video conferencing platform used, (2) locations of where participants had course meetings, (3) the type of Internet connection, (4) average number of students in their online classes, (5) course format, (6) gaining students' attention, (7) instructor as a moderator, (8) technical glitches, (9) communication access, (10) technology access, and (11) course delivery.

**Video conferencing platform type.** Six different types of online video conferencing platform were used by participants in their doctoral programs; Adobe Connect (n=11), Fuze (n=18), Appear.in<sup>6</sup> (n=2), Zoom (n=3), Google Hangout (n=1), and VP conferencing (n=1). Nine participants indicated experience with more than one online video conferencing platform.

**Locations.** Participants participated in online course meetings in multiple locations such as on campus (n=6), at home (n=22), at work (n=7), at a public place (e.g., restaurant, cafe) (n=1), or a different space each time (n=4).

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**Internet connection type.** Three different types of Internet connections were used such as Fiber Optic Service (Fios, n=6), Cable (n=14), and Digital Subscriber Line (DSL) (n=2).

**Number of students in online class.** Additionally, respondents answered questions regarding the number of students in their online video conferencing classes on average and responses were as followed: 4 students (n=2), 5 students (n=2), 6 students (n=5), 7 students (n=2), 8 students (n=3), and 10 or more (n=1).

**Course format.** Courses were rarely reported as being purely 100% online (n=1) or face-to-face only (n=1). Rather, courses tended to be a combination of online or face-to-face courses (hybrid programs; n=13). As far as course software used, Fuze was the most popular (n=12) followed by Adobe Connect (n=9) at the time of the study<sup>7</sup>. Courses were more likely to be taught by hearing instructors than Deaf instructors at a ratio of nearly 2 to 1. Interpreters were hardly used (n=14) but they were used in some participants' classes (n=8). One respondent cited the use of a visual ASL interpreter for Deaf students owing to the fact that the instructor was not fluent in ASL.

**Gaining students' attention.** It should be noted that the video conferencing software listed above prioritize the use of sound or audio cues as a way of gaining attention. For instance, the platform configuration in 2017 when the survey was conducted was such that Fuze added a yellow border to any participants' screen where sound is detected. Whereas, Google Hangouts made the loudest participant screen the center of attention (a larger screen size compared to the other screens). In 2020, the most popular video conferencing platform, Zoom, adds a yellow border to any participant that is audibly speaking. Due to the fact that this survey was targeted to respondents utilizing ASL in video conferencing, a question was asked about how participants gain each other's attention during online course meetings. Participants identified with and selected a variety of ways of gaining attention of others: the use of gestures such as waving (n=13), the use of internal platform alerts such as Fuze's ability to "raise a flag" (n=3), sounds to cause a screen to

<sup>7</sup> Anecdotal evidence shows that as of 2019/2020, Zoom is the dominant platform used in the field. Fuze and Adobe Connect are rarely mentioned/seen.

“highlight” (n=1), and n=6 chose “other” as an option. The “other” options were specified as being, “teacher moderation,” “typing messages to catch someone’s attention,” “raising hands,” “use of colored index cards,” and “survival of the fittest.”

**Moderator.** Referring to teacher moderation, a question was also asked of respondents regarding how classes were moderated, and the top answers had to do with visual cues (n=12), teacher prompting (n=10), and student prompting (n=10). Respondents largely stated that no formal rules were established regarding the operation of a course (n=8). Where rules existed, they were often specific and limited to certain instances such as rules for turn-taking (n=5), rules for attention-grabbing (n=3), rules for background etiquette (n=1), and rules for type of clothing to wear for clarity (n=1). One respondent stated, “Informal rules [are] sometimes developed over time as we go along through trial and error. I wish they were established on the onset of the course.”

**Technological glitches.** Participants were asked what technological glitches (if any) were experienced during course meetings. Respondents chose the following; “video freezing” (n=13), “fuzzy screen/pixelation” (n=12), “lag time” (n=9), “disconnections on others’ end” (n=9), “trouble accessing/connecting” (n=4), and “no technical issues” (n=1).

**Communication access.** Of particular interest was the quality of communication access during the course meetings. Participants were given questions on a Likert scale ranging from “Excellent” (5.0), “Adequate” (4.0), “Okay” (3.0), “Inadequate” (2.0), “Poor” (1.0), and “N/A” (no score). The average expressive signing ability of classmates was given a mean ranking of 1.93, somewhere between “Poor” and “Inadequate”. Classmates’ receptive signing ability received the same mean score and ranking as expressive signing ability. The expressive signing ability of instructors was given a mean score of 2.07, somewhere between “Adequate” and “OK.” The receptive signing ability of instructors ranked within the same range, although, with a higher mean of 2.2.

**Technology access.** Another area assessed was technology access, ranked on a Likert scale ranging from “Very Satisfied” (5.0), “Satisfied” (4.0), “Neutral” (3.0), “Dissatisfied” (2.0), “Very Dissatisfied” (1.0) and “N/A” (no score). Regarding the average Internet connectivity, participants ranked teachers a mean of 2.07 and classmates a mean of 2.47; scores that both fall between “Dissatisfied” and “Neutral.” Satisfaction

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with the ease of using their specific online video conferencing platform was ranked with a mean of 2.53; between “Dissatisfied” and “Neutral.” Regarding the design of their specific online video conferencing platform, participants still hovered between the “Dissatisfied” and “Neutral” range with a mean score of 2.71. The suitability of the chosen platform for hosting online classes did not surpass the above rank with a mean of 2.50.

**Course delivery.** Despite the low scores for technology access, participants were still more positive about the online or hybrid format compared to 100% face-to-face options. Hybrid courses had a mean score of 2.07 and online video conferencing had an average score of 2.29; whereas face-to-face classes had an average score of 1.29. A score of 1.29 falls between the “Inadequate” and “Poor” range while the 2.29 and 2.07 scores fall between the “Okay” and “Inadequate” range. A direct question asking participants to characterize the video conferencing experience compared to the face-to-face experience yielded a mean score of 2.93. The face-to-face experience compared to the video conferencing experience scored an average of 2.00. Both are still within the “Okay” and “Inadequate” range. Another result regarding preparedness to participate in online video conferencing courses had a mean score of 2.00, indicating that on average, participants felt “Inadequate” and “Okay” about their preparedness.

In addition to these characteristics and experiences of videoconference course meetings, participants shared advantages and disadvantages from their experience with past and current online courses. Responses have been edited for length and clarity.

### Advantages

When asking participants for open-ended comments as to what they perceive as advantages for videoconference course meetings, common themes were found. They included (1) the ability to participate remotely, (2) convenience, (3) flexibility of schedule, and (4) information sharing. The comments are presented verbatim in bullet points below:

**Ability to participate remotely (n=4)**

- It's nice for those who do not live near campus.
- Being able to participate from afar.
- Can do from great distances ASL/Deaf friendly.
- Feasibility for those who cannot relocate. Relocation to DC for example is cost prohibitive for many.

**Convenience (n=4)**

- Weather/convenience of working from home.
- Less time consuming and time convenience.
- Convenience of staying at home instead of traveling.
- Convenience.

**Flexibility of Schedule/Less travel/more time with family/staying home (n=6)**

- Less travel and spend more time at home with family.
- Good for avoiding traffic, travel, or living out of state.
- Convenience of staying at home.
- Staying home.
- I like that I can be in the comfort of my own home and able to save money by not traveling.
- Flexibility of schedule.

**Information sharing/opportunity for discussion (n=2)**

- Gives you that "face-to-face" feel.
- It's also very easy to follow along for particular courses that involve a lot of discussion.

**Disadvantages**

Participants also shared some disadvantages with their experiences with video conferencing course meetings. Common themes included; (1) technical issues, (2) unpreparedness, and (3) lack of participation, which are

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discussed next.

### **Technical Issues (n=8)**

- Connectivity.
- There has been a lot of freezing with Fuze. I've experienced other students who have poor connection or have lower speed of Internet connection.
- Video quality.
- Glitches (e.g. freezing, and lost connections).
- Glitches (happens often).
- Classmate's video sometimes freezes, echoes, or is pixelated.
- Internet connectivity.
- I feel it is difficult to do videoconference course meetings for coursework that requires a lot of visual examples "worked out," like statistical courses. Granted, I have seen platforms where the teacher can work out a problem with a stylus and tablet of some sort where they can show students how to do it, but they cannot see what students have done/worked out (from what I've seen).

### **Unpreparedness (n=4)**

- Unpreparedness among us students.
- No guidelines/rules in place. Not everyone is on the same page on how to use it appropriately.
- It could be that the professor has not prepared for group discussion in advance prior to videoconference course meetings.
- It's basically a stab in the dark. Too many hearing professors with zero inherent ability to modify "sign language" to a 2D (2-dimensional) format whereas most deaf people have this ability based on daily living (e.g. using VP and FaceTime).

### **Lack of participation (n=6)**

- The wasted time with turn-taking that is not as smooth as it would be in person.
- As for class meetings, I feel more students are more reserved in online meetings than in face-to-face meetings. Face-to-face meetings tend to have more discussion.
- I have often observed unequal contributions from students. It is not as personal; feels a bit disconnected.
- Non-interactive with students or instructors.
- Travel (lodging, meals, and travel time).

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•I prefer face-to-face and to be in class with others. Online is less visual.

In addition to these advantages and disadvantages, participants also shared elements that contribute to successful and unsuccessful video conferencing course meetings. Common themes for successful video conferencing meetings included; (1) preplanning, (2) class facilitation/participation, and (3) technological issues. In contrast, common themes for unsuccessful video conferencing meetings included; (1) Internet access/technical issues, (2) software/platform, (3) participation, and (4) users' background knowledge/experience.

Lastly, participants were invited to add any comments that may not have been addressed by the survey questions. Comments fell along the following themes; (1) outside of class interactions/one-on-one meetings, (2) a need for face-to-face time (whether in addition to or as a replacement of online video conferencing), (3) accommodations/access to online videoconferences, and (4) the perks of online conferencing.

### Elements of Successful video conferencing Course Meeting

As it turns out, a successful video conferencing occurrence frequently does not occur spontaneously. Often, there has to be some level of preparation, thought, and participation engagement in order to ensure success. While there are some similarities, what makes for a successful class meeting may not translate as well in a successful video conference meeting.

Comments were organized across several recurring themes: (1) preplanning; (2) class facilitation/participation; and (3) technology.

### Preplanning

•Everyone is prepared, respectful of time, and turn-taking.

•Making sure the group is small. If it is 10 or more, then the videoconference isn't as successful.

•The same elements that contribute to a successful class (preparedness and discussion).

•Competent instructors who are not luddites. Same goes for

students.

- Also, making sure that everyone follows the rules that have been established for a successful meeting.
- Guidelines in place for turn taking and attention grabbing.
- Develop agenda and more structured meetings.
- Small size of group.
- Students should be small in number.
- Materials should be visual and written.

### **Class Facilitation/Participation**

- Professor leads the discussion in ASL and handles the video enlargement of the person asking questions or taking turns to discuss. Leave the professor's face on 1/4 of the screen and for the person taking the turn to participate on the other 1/4 of the screen while the rest of the people's faces on the bottom half of the screen. In some cases, an ASL interpreter may take up 1/4 of the screen instead of the professor. It would provide greater clarity and much less strain on deaf people's eyes.
- Structured meetings such as identifying oneself and ensuring that everyone can see everyone.
- Everyone participates equally, uses the chat box, and uses Power Points as needed.

### **Technology**

- Good Internet quality.
- Good connection.
- Internet access.
- Top of the line technology and people who know how to use it.
- Use of the right software. Adobe Connect has always had better pictures than Fuze.
- Internet connectivity.
- A good Internet connection/speed.
- HIGH SPEED INTERNET (hard-wired). Good lighting. Clear background. No distractions (kids/pets).
- Proper technical preparedness with Internet connection and cameras.

### **Elements of Unsuccessful video conferencing Course Meeting**

As shown above, being aware of what elements contribute to a successful video conferencing course meeting is helpful as far as organizing and executing such course meetings. Likewise, it is also helpful to



know what elements might impede a successful video conferencing course meeting. Such information can be helpful when it comes to facilitating a course meeting via a virtual platform. Comments were grouped by recurring themes: (1) Internet access/technical issues; (2) software platform; (3) participation; and (4) users' background knowledge/experience.

### **Internet Access/Technical Issues**

- Internet access.
- Poor Internet connection.
- Internet quality.
- Tech glitches.
- All the glitches.
- Bad Internet connection (often using wi-fi!). Bad lighting. Bad background. Distractions in background.
- Internet connectivity.
- Poor Internet connection, poor camera quality, poor lightning and background.
- Depends on the Internet.

### **Software/Platform**

- Small screens of each student could be a burden for those who depend on visual cues as well as for deaf people.
- Video platforms such as Fuze.
- We should consider exploring other platforms.
- Unfamiliarity with the platform being used.

### **Participation**

- Not everyone participates; distractions.

### **Users' Background Knowledge/Experience**

- Technology and people who do not know how to use it.
- People who are not computer literate.
- No control over turn-taking or attention-grabbing.
- The opposite of the above. Instructors who are total luddites, resistant to change, disfluent, and have absolutely no idea what they are doing.

## Other Comments

Participants completing the survey had several opportunities to share comments beyond what was asked above. Frequently, those opportunities came in the “other” field where participants could share additional information. There was also a general section at the end of the survey that welcomed additional feedback and/or information. The “other” comments have been organized by common themes: (1) outside of class interactions/one-on-one; (2) face-to-face; and (3) accommodations/access, and perks.

### Outside of Class Interactions/One-on-One

- Umm -- sometimes I would like to have the opportunity to meet with students after the class ends.
- I use video conferencing every time I meet with my advisor. One-on-one is much different than a group; it is much better I would say. Also, I only use it because meeting in person is not physically possible.

### Face-to-Face

- Unless students are distance learners, I see no need for them [online classes].
- F2F is better.
- However, for ASL users, we still like to have that face-to-face time for deeper discussions.
- I have always felt dissatisfied when taking courses online.

### Accommodations/Access

- Deaf students have the right to request for dual accommodations, ASL interpreters and CART. I have discussed with students from other collegiate institutions and learned that they have fought so hard for both, but they were forced to choose one. I have successfully convinced my university to provide both accommodations for certain courses, depending on the level of complexity of the course content.
- Background and clothing; must establish ground rules prior to conferencing.
- It's like the wild Wild West out there. Need videocentric guidelines. Need to ensure accessibility for DeafBlind<sup>8</sup>. Need to develop a deaf/visual centric video conferencing platform.
- Just because a technology is available, it does not mean you can jump on it and advertise it as successful. Be informed, Be trained, have your tech worked out before you even use it. The onus should be on the university to perfect the platform, not the students. And for the love of god, have faculty fluent in 2D ASL. If they are not, then why are they teaching these classes?
- Internet connectivity!

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<sup>8</sup> DeafBlind is used as an adjective to describe a person who is DeafBlind or their diagnosis (Wolsey, 2017).

- I do see that there are potential benefits to other platforms that we have not tried yet.
- The time spent video conferencing should be appropriate because students live in different places and there may be an unavailable connection. Students who are multicultural may find that this is their first time using this kind of courses (online video).

### Perks

- I did like the one class I had online since I did not have to waste time driving to and from campus, being that I was an off-campus student.
- Having a class online is great. It shows that we are moving up in the world.
- I have enjoyed my courses online so far.

With the reported data and participants' comments above in mind, we now turn to the discussion portion. The connections between the literature review and the data will reveal implications as well as recommendations for future research.

### Discussion

The issues impacting the deaf education *pipeline* as well as the historical foundations of distance learning were explored in the literature review. It is prudent to add a new epoch of history considering that this paper is being finalized in an era where the world is collectively dealing with a global pandemic; one with repercussions when it comes to online education or remote learning and deaf education.

With the COVID-19 virus being declared a pandemic on March 11, 2020 (World Health Organization, 2020), it significantly impacted people's working, schooling, and daily lives (Carroll et al., 2020). The world suddenly found a need to shift to remote learning, remote working, and even virtually socializing (Johnson et al., 2020). It was a necessity in order to maintain social distancing and curb the rapid spread of the virus (Cross, 2020).

Researchers have not begun to scratch the surface of the experience of the virtualization of our society during the past few months. More specifically, the impact of virtual learning<sup>9</sup> during a pandemic, its effectiveness, its challenges, its strengths, and its weaknesses. What many agree on is that it has altered the fabric of our society as we know it (Carroll et al., 2020) and the education field is likely to continue undergoing a major shift (Schleicher, 2020). Even when in-person schooling resumes, there will likely be elements of virtual learning that remain whether as a hybrid model, an alternative to in-person schooling, a way to reach underserved areas and/or populations, and/or other elements that have yet to be identified.

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<sup>9</sup> As a reflection for how a few short years have changed the conversation, consider the terminology usage. For instance, at the time of our study, the terms used tended to be "online education," or "distance education," or "video conferencing." Nowadays, it is universally understood as "virtual education" or "virtual schooling" or "virtual learning" or "remote learning" and is understood to use various combinations of video conferencing and/or other LMS features. Likewise, the "face-to-face" or "F2F" labels seem to have been replaced with "in-person" terminology.

There is a possibility that people will increasingly demand virtual/remote options now that they have experienced it and know that it is feasible. It is also likely that this option will especially be true with regards to schooling, where one chooses to live and/or work, and using technology and virtualization to increase the reach of services to remote areas and underserved populations. All of the above are factors that directly affect the deaf education field and its *pipeline*. Location and schooling options affects the attraction of prospective candidates for deaf education teacher preparation programs (Luft, 2019). Like much of the educational landscape in the U.S., the field of K-12 deaf education is often contending with a lack of qualified deaf educators and/or may reside in hard-to-serve and/or hard-to-reach areas (e.g., rural areas; García & Weiss, 2019). Technology and virtualization is a tantalizing tool that could be an answer to the above issues. Thus, as a niche population with urgent needs, the deaf education field is likely to be intimately involved in these conversations in the near future. It has been especially clear from the beginning of the research that the deaf education *pipeline* was suffering from a lack of resources, a lack of people, and a greater need in the field that was not adequately being addressed (Luft, 2019). It is a fact that has only become clearer during the pandemic (Schleicher, 2020).

What is readily apparent is that it is often assumed that online video conferencing “leverages” the playing field somehow by providing equal access through the use of video and delivering instruction in ASL. Comments indicated that this issue was not always the case. Overwhelmingly, participants have pointed to a need for guidelines in place, a predefined structure with online video conferencing classes, and rules regarding minimally acceptable technological specifications to which all participants must adhere. It is a mistake to assume that online video conferencing classes are akin to regular face-to-face classes and can operate the same way. The unique nature of online courses requires a different approach and set of guidelines in order to be able to successfully access the content, participate equally, and harness the power of technology to further one’s education. If virtual learning is to become a mainstay in the educational landscape, then educational courses must adapt to provide teacher preparation specializing in virtual instruction. The deaf teacher preparation program will have the additional challenge of ensuring that access and accommodation needs are met during virtual learning.

In short, this discussion brings up more questions than answers due to the unprecedented direction that virtual learning took from the time the data was collected to the finalization of the final paper. Next, the implications and recommendations/future research are discussed.

### **Limitations**

Limitations include the fact that the sample is not representative of the population. Deaf education doctoral students as a whole tended to be older, more experienced with college instruction, have had the benefit of face-to-face instruction, and could easily translate their skills to an online platform. Additionally, the survey was limited to deaf education doctoral students whereas there are other majors, programs, and departments utilizing some form of online instruction. Furthermore, the data was collected during a time where virtual learning was a rarity among deaf people. The results may have been different if the data were collected during 2019-2020 with the COVID-19 pandemic. Lastly, most respondents identified as deaf or hard of hearing. As a group, deaf and hard of hearing people may or may not

have different access and accommodation needs, and unique considerations compared to the DeafBlind population who may not receive full visual access.

### **Implications**

The use of online and hybrid courses is growing in popularity in school settings, both at the K-12 level and in higher education as well. Typical online courses tend to be largely centered about listening and speaking (verbal) requirements, which has implications for people with auditory, speech, visual, or a combination of the above disabilities (Bahan 2009; 2010). Online courses delivered and instructed in ASL provide a seemingly accessible platform for the majority of deaf students who use ASL. However, if they are deaf with additional disabilities, online courses may not be as accessible as face-to-face courses.

Currently, online education utilizing video conferencing in ASL has no guidelines or regulations to maximize success especially for deaf students with additional disabilities who require multiple forms of access. For instance, when DeafBlind students wish to take online courses, they often require a different level of visual and tactile communication to access communication and information than sighted Deaf peers (Wolsey, 2018). This population often needs to obtain ASL interpreters and certified deaf interpreters who use ProTactile, support service providers, communication facilitators, and/or assistive technological devices in order to have equal access to communication and course content (American Association of the DeafBlind, 2009; Collins, 2004; Nuccio & granda, 2013; Registry of Interpreters for the Deaf, 1997). Sometimes, students, who are proximate to campus, are asked to come on-campus or a central location in order to “combine” several people’s videos and make access easier. Doing so costs them the benefit of being able to participate remotely if they wish. Additionally, meeting in a central location in person may make it difficult to adhere to social distancing requirements as needed.

Both students and faculty members are often not trained on how to successfully deliver online content nor ensure maximum accessibility during online learning. Many faculty members simply take face-to-face course materials and change the delivery format rather than tailor course content for online accessibility and instruction. As a result, the quality of online teaching and learning differ from face-to-face classes. Faculty need appropriate support, resources, tools, best practices, and input to provide a high quality and accessible online education, as well as a positive and effective remote learning environment for all students.

### **Recommendations/Future Research**

With the above issues in mind, the primary issue at hand now turns to whether or not virtual learning should be a mainstay in the deaf education field; the challenges and opportunities with virtual learning; adapting current deaf education courses to prepare future teachers for virtual instruction; and the need for visuotactile-centric approaches to virtual learning (Bahan, 2009). These topics go beyond the data collected by the researchers. Therefore, future research related to the above topics are needed. Aside from future research, based on these findings, the authors recommend, at minimum, developing guidelines for online video conferencing for ASL users. Perhaps, a committee of some sort consisting of deaf, hard of hearing, and DeafBlind students, ASL-users, ASL experts, disability service providers, advocates, faculty, technological support, and online course designers could be formed to explore these

issues together and develop a master set of guidelines. The Association of College Educators - Deaf and Hard of Hearing (ACE-DHH), Conference of Educational Administrators of Schools & Programs for the Deaf (CEASD), American Sign Language Teachers Association (ASLTA), and/or the National Association of the Deaf (NAD) are all possible organizations that could possibly assist with establishing committees and exploring these issues. NAD in particular has developed numerous position statements related to education, 21st Century Communications and Video Accessibility Act (NAD, 2020b) as well as Internet Access and Broadband access (NAD, 2020a).

Although the issue focused specifically on students utilizing ASL in a video conferencing platform, we recognize that 'typical' courses not utilizing ASL could result in access issues for members of the deaf communities. First, not all members of the deaf communities use ASL. Secondly, online courses (whether utilizing ASL or not) may be a challenge for those individuals with additional disabilities. We feel a special section of the guidelines should specifically focus on DeafBlind access issues as they most likely differ. Last but not least, a visuo-centric video conferencing platform would likely go a long way in alleviating many of the issues with the existing video conferencing platforms that exist.

In the proliferation of VP and video relay services over the past several decades; technology needs and corresponding software responding to those needs has seemingly developed in lockstep. It has enabled those people with slow Internet connectivity speeds to still receive and transmit clear video feeds. Additionally, VP software has been continually developed and refined over the years with ASL-centric design principles and usability features in mind. These principles and features could be considered in developing a visuo-centric video conferencing platform; sort of an online format of a "Deaf Space" ideal.

## **Conclusion**

In conclusion, this study sought to explore the experiences of 22 doctoral deaf education students participating in courses utilizing video conferencing via ASL. It was also wondered whether it could help alleviate deaf education *pipeline* issues. Furthermore, the study was conducted during a time where not many people had experienced virtual learning; this fact is no longer true thanks to COVID-19. Now, one would be hard pressed to find someone that had yet to experience virtual learning. While the findings from the survey provided a number of important factors, advantages, and disadvantages that make virtual learning successful and unsuccessful via ASL, they are important to keep in mind as we move toward remote learning. As more and more virtual learning is being implemented during the pandemic in K-12 schools and higher education for the majority of students, more needs to be done to provide greater accessibility online. It is important to acknowledge that the ability to provide online education in ASL allows a greater number of deaf people to engage and participate in learning utilizing their native or preferred language. However, this seemingly accessible platform has not proven to be entirely accessible for students with additional disabilities and/or DeafBlind students. Findings also showed that there is a lack of consistent guidelines to consult regarding development and execution of successful online video conferencing courses delivered in ASL and for diverse students who have multiple learning needs. Establishing a committee would be beneficial to explore the development of a set of guidelines and address some of the technological and platform issues. After all, it is not a question of whether virtual

learning is here to stay, but rather, how the deaf education field will best adapt to and maximize it to address its urgent needs.

## CALL FOR SUBMISSIONS

Thank you for reading our inaugural issue. We hope you enjoyed it, it is an endeavor we hope to continue and we plan to publish twice a year in April and October. We are now accepting submissions for our April 2021 issue - the topic is:

### FROM THE FRONTLINES OF THE FIELD: REFRAMING DEAF EDUCATION

Those invited to submit include students, educators, professionals, parents, stakeholders, and any one else with a vested interest in the field or an important perspective to share.

**Please send your submissions to [redefining@gmail.com](mailto:redefining@gmail.com) by February 21, 2021.**