ABSTRACT OF CAPSTONE

Cassandra C. Best

The Graduate School

Morehead State University

April 6, 2021

CREATING ACCESSIBLE INSTRUCTION

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Abstract of Capstone

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A capstone submitted in partial fulfillment of the
requirements for the degree of Doctor of Education in the
Ernst and Sara Lane Volgenau College of Education
at Morehead State University

By

Cassandra C. Best

Radcliff, Kentucky

Committee Chair: Lenora J. Justice, Associate Professor

Morehead, Kentucky

April 6, 2021

ABSTRACT OF CAPSTONE

CREATING ACCESSIBLE INSTRUCTION

Creating accessible instruction has been a subject of debate and lawsuits since the Civil Rights Movement. Examples include *Mills v. Board of Education* in 1972 discussed the 14th Amendment of equal rights in public K–12 education; instances involving extracurricular after-school programs, such as the YMCA Middle Tennessee Agreement for creating accommodations to those with behavioral disabilities; and the current *National Association of the Deaf v. Harvard University* for online video accessibility to include appropriate closed captions. Creating accessible instruction is still an essential focus as school districts, faculty, teachers, and instructional designers' transition from synchronous and asynchronous learning. The COVID-19 pandemic has created new challenges for K–12 and higher education faculty and staff to design accessible instructional materials for traditional, remote, and hybrid learning environments.

Recent studies conducted from Cook's (2007) perceptions of disabilities on higher education faculty and court cases inspired disability laws. The Individuals with Disability Education Act, Section 504 and Section 508 of the Rehabilitation Act, the Americans with Disability Act, and the Americans with Disability Act Amendment Act have ensured a "free appropriate public education" (FAPE) for all students. Educators must have the appropriate training to understand the various disability laws concerning education and how to create accessible instruction for all students with the aim to improve academic success and reduce potential litigation from failure to

produce accessible instructional materials. The capstone aims to create an online

professional development course using Google Classroom as the learning

management system to foster an online learning community and participation-based

learning, and to assist faculty, K–12 teachers, and instructional designers in

understanding the educational laws and creating accessible instructional materials.

KEYWORDS: Americans with Disability Act (ADA), disability, accessibility,

learning, instruction

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Date

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CREATING ACCESSIBLE INSTRUCTION

By

Cassandra C. Best

Approved by

_____
Leah Simpson
Committee Member   Date

_____
Sherry Stultz
Committee Member   Date

_____
Jeannie Justice
Committee Chair   Date

_____
Timothy Simpson
Department Chair   Date

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DEDICATION

To my grandmother, Sandra Louise Jones-Parker, my best friend, my ride or die, and my second mother, who was able to start my educational journey with me and finished this journey watching me from Heaven; and to my amazing mother, Pamela Louise Parker-Best, my most loyal and trusted confidant, biggest cheerleader, and my comfort blanket. Without your guidance, constant love, and support, the completion of the doctoral journey and capstone project would not exist. Thank you.

ACKNOWLEDGEMENTS

To my "Big" Doctoral Cohort. I appreciate your friendship, advice, and fellowship during the doctoral journey. We became a family during this experience, and I am so happy to share this experience with all of you! I truly value the time we spent together, the warm words of encouragement, and all the venting sessions that come with getting a doctorate degree. You all inspire me!

To my Henderson County School and North Middle School family, a huge thank you for the support and motivation. To Sherry Lowe and Emily Richey, thank you for the support and encouragement. Words cannot fully express how grateful I am for the time you sacrifice to be my sounding board and for giving me the opportunity to voice my opinions and lead technology-based instructional sessions. To the eighth-grade team, thank you for constant support and love! You all have been the best team to work with this year and I am sincerely grateful.

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Executive Summary

What Is the Core of the Capstone?

In education, there is a golden triangle of quantity, quality, and equity.
You just can't ignore one while strengthening the others.

(Yechury, n.d.)

Imagine you are the parent of a 14-year-old boy named Billy. Billy is an honor roll student who plays football for the school team and is involved in the Kentucky Youth Association. Billy has a great group of friends, and all his teachers admire his leadership abilities and positive attitude in class. Over a few weeks, Billy starts to develop severe headaches. He has trouble concentrating on his assignments, and he loses his balance more often. Finally, you take Billy to the doctor, who diagnoses him with a genetic disease that is slowly causing him to go blind. Months pass. Billy must wear special glasses to help him see. The school provides a case manager who sets up an admission release committee (ARC) to manage his learning needs, discuss concerns, and help create an individualized education program (Tangredi, n.d.). Teachers use the Individualized Education Program (IEP) to ensure that Billy receives a quality education that accommodates his new learning needs. Fortunately, the special education teacher helps the general education teacher modify assignments and restructure instruction to help make his learning accessible.

By early 2020, the global COVID-19 pandemic forces Kentucky schools to close and move toward using nontraditional instruction (NTI) to complete the rest of the school year. Teachers quickly try to develop digital instructional materials and

deliver virtual instruction. Billy has a difficult time completing his online assignments. He becomes increasingly frustrated and soon loses motivation to complete his homework. His teachers have difficulty developing instruction and grade leniently because of the pandemic. However, the current discussions about the next school year indicate that the majority of the school year's education will occur through virtual means. You fear that Billy will not receive high quality, accessible instruction during this time, prompting you to address your concerns with the ARC.

The previous scenario illustrates what parents all over the country with special needs children experience with NTI (Levine, 2020; Mader, 2017; McLaren, 2020; Nadworny, 2020; Shockman, 2020). K–12 general education teachers lack the proper training to design and deliver accessible instruction to all students (McAlvage & Rice, 2018). Moreover, due to a lack of training, faculty members in higher education are experiencing a similar difficulty developing accessible materials to meet the needs of students with disabilities. Instructors' lack of proper training has occurred, although specific acts and laws have been established throughout the years to ensure the elements of the so-called golden triangle of education are met.

These acts and laws include:

- The Rehabilitation Act of 1973 bans discriminatory actions based on disabilities, race, gender, and so on.

- The Individuals with Disability Education Act of 1997 promotes free appropriate education (FAPE) in the least restrictive environment (LRE).

- The Americans with Disabilities Act of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008 clearly define the term *disability* and dictate that students in K–12 and higher education institutions must receive accessible and equitable learning (Chinn, 2004; McAlvage & Rice, 2018; Wilhelm, 2003; Zirkel, 2009).

The lack of training and accessible materials have caused multiple lawsuits for higher education institutions, and, because of NTI for COVID-19, have prompted a rising concern for K–12 general education teachers (Banks, 2019; Chinn, 2004; McAlvage & Rice, 2018; Wilhelm, 2003; Zirkel, 2009).

Thus, the proposed capstone project, *Creating Accessible Instruction,* is a professional development course to aid teachers and instructional designers in designing accessible instructional materials in the classroom. The current literature focused on designing accessible instructional content for K–12 teachers is minimal, and only a moderate amount of research exists for higher education. Therefore, the purpose of this capstone project is to create a professional development course to train educators, curriculum specialists, and instructional designers in ADA law with the added amendments of Section 504 (for public institutions) and Section 508 (for private institutions and technology). The capstone goals are to train educators, provide a model, and help educators design accessible instructional materials.

Key Terms and Definitions

Americans with Disabilities Act (ADA). The ADA is a disability law that "prohibits discrimination on the basis of disability in employment, state and local government, public accommodations, commercial facilities, transportation, and telecommunications" (U.S. Department of Justice, 2020, ADA section, para. 1).

Americans with Disabilities Act Amendments Act (ADAAA). The ADAAA is an addition to the ADA of 1990, signed into law in 2008 that defines *disability* as it pertains to "students in both higher education settings and K–12 settings" (McAlvage & Rice, 2018; U.S. Equal Employment Opportunity Commission, 2020).

ADA Title II. This is an amendment of the ADA that:

covers all activities of State and local governments regardless of the

government entity's size or receipt of Federal funding… [and] requires State

and local governments to give people with disabilities an equal opportunity to

benefit from all of their programs, services, and activities.

(U.S. Department of Justice, 2020, ADA Title II: State and Local Government

Activities section, para. 1)

Individuals with Disabilities Education Act (IDEA). This disability law"

requires public schools to make available to all eligible children with

disabilities a free appropriate public education in the least restrictive

environment appropriate to their individual needs… [and] also requires public

school systems to develop appropriate Individualized Education Programs

(IEPs) for each child.

(U.S. Department of Justice, 2020, Individuals with Disabilities Education Act

section, para. 1)

Section 504. Section 504, an amendment to the Rehabilitation Act, states:

No qualified individual with a disability in the United States shall be excluded

from, denied the benefits of, or be subjected to discrimination under any

program or activity that either receives Federal financial assistance or is

conducted by any Executive agency or the United States Postal Service…

therefore, requiring reasonable accommodations for employees with

disabilities; program accessibility; effective communication with people who

have hearing or vision disabilities.

(U.S. Department of Justice, 2020, Rehabilitation Act Section 504, paras. 1–2)

Section 508. Section 508 is an amendment to the Rehabilitation Act that

"establishes requirements for electronic and information technology

developed, maintained, procured, or used by the Federal government… [and]

also requires Federal electronic and information technology to be accessible to

people with disabilities, including employees and members of the public"

(U.S. Department of Justice, 2020, Rehabilitation Act Section 508, para. 1).

Who Is the Capstone Meant to Impact?

The capstone targets the following audiences:

- North Middle School (NMS) teachers

- K–12 teachers

- higher education faculty

- instructional designers

- instructional technologists.

The capstone's projected impact on the intended audience is positive. The capstone may assist NMS teachers, K–12 teachers, higher education faculty, and instructional designers to design accessible instructional materials. The capstone is a professional development course to help the intended audiences learn more about the ADA and its related amendments to ensure that educators are complying with federal law and designing instruction to adhere to the so-called golden triangle of quality, quantity, and equitable learning.

Why Was This Capstone and Related Strategies Selected?

The recent and ongoing COVID-19 pandemic has forced K–12 teachers and higher education faculty to teach remotely. Traditionally, public schools have relied on special educators to guide, co-teach, inform, and modify instruction for accessibility for students with disabilities. However, the pandemic has forced schools to close and use NTI to complete the rest of the 2019–2020 school year, with a possibility of beginning 2020–2021 with NTI.

As a consequence, teachers have been forced to design instruction for online learning. Because of Section 504 of the Rehabilitation Act, public educators are

obligated by law to create accessible instruction for students with disabilities. To design and deliver adequate, accessible, implicit instruction for all students, general educators must be competent in ADA, ADAAA, ADA Title II, IDEA, Section 504, Section 508, and IEP requirements. Unfortunately, as mentioned, general educators have relied on special education teams to modify existing curriculum or create accessible instruction. Therefore, general educators may not be equipped with the proper training to design accessible instructional materials for online learning.

Recent Lawsuits

Many students with disabilities have been unable to complete higher education courses or have been refused admittance to programs due to lack of accessibility. In fact, students with disabilities and disability organizations have filed numerous lawsuits against higher education facilities. Cases include:

- ***Anthony Lanzilotti, Mitchell Cossaboon, and National Federation of the Blind v. Atlantic Cape Community College*** (ACCC; 2015). In 2015, Lanzilotti and Cossaboon, two blind students, accused ACCC of violating Title II of the ADA and Section 504 by delaying the creation of accessible instructional materials (*Anthony Lanzilotti, Mitchell Cossaboon, and National Federation of the Blind v. Atlantic Cape Community College*, 2015, p. 1). The primary purpose of the case was to create an agreement and commitment with ACCC to produce accessible instructional materials for students with

disabilities—specifically, materials that blind students could access at the same time as their visually unimpaired counterparts.

- *National Federation of the Blind (NFB) and the American Council of the Blind (ACB) v. Arizona State University (ASU) and the Arizona Board of Regents* (ABOR). In 2010, the NFB and the ACB filed a lawsuit against ASU over the dispute of using Kindle DX as the new mode for textbook delivery (Nichol et al., 2010, Recitals section 1). Even though Amazon provides audio textbooks, blind and visually impaired students are not able to navigate the menu to purchase or select the textbooks from Kindle DX. Therefore, ASU was in direct violation of Title II of the ADA and Section 504 (Nichol et al., 2010). Fortunately, all parties were able to reach a mutual agreement to continue with e-book delivery using a platform to benefit all students.

- *Mills v. Board of Education*. This 1972 case involved the parents of children with physical, learning, or behavior disabilities. The parents' attorneys used the 14th Amendment's equal protection of the laws provision to argue that the students had been "excluded from education without due process" (Chinn, 2004, p. 10).

- **YMCA of Middle Tennessee Agreement (Resolution agreement between the United States of America and the Young Men's Christian Association of Middle Tennessee under the Americans with Disabilities Act DJ # 202-71-130).** A YMCA afterschool program for students banned a student from

attending and participating in a program because of his behavior (Resolution

agreement, 2020). The behavior was a result of the child's autism spectrum

disorder (ASD). In response, the father of the child filed a complaint with the

U.S. Department of Justice regarding the cause of the child's unruly behavior.

ASD could cause developmental issues such as "social, communication, and

behavioral challenges" that could hinder "major life activities," as cited in the

ADA (Resolution agreement, 2020).

- ***Aleeha Dudley and United States of America v. Miami University et al.***

  (*Aleeha Dudley and United States of America v. Miami University et al.*,

  2016). Under Title II of the ADA, schools are required to provide assistive

  technology and accessible instructional materials for students with disabilities.

  However, in 2014, a student was delayed in completing course materials

  because of the university's inaccessible materials (Griffin, 2019). Therefore,

  the university had violated Title II of the ADA, and parties reached a

  settlement that included "modifying online content to WCAG 2.0 guidelines,

  creating a technology audit and procurement process, and monetary

  compensation" (McAlvage & Rice, 2018, p. 5).

- Accessibility complaints pertaining to higher education and K–12 online

  schools' websites. According to McAlvage and Rice (2018), multiple cases

  from higher education institutions and K–12 online schools' inaccessible

websites have hindered students with disabilities, causing negative publicity
because of ADA violations (2018).

- ***National Association of the Deaf et al., Plaintiffs, v. Harvard University and
  the President and Fellows of Harvard College, Defendants*, 2016.** Under
  Sections 504 and 508 of the Rehabilitation Act and Title III, Harvard
  professors failed or refused to provide adequate closed captions for online
  instructional videos, lectures, and podcasts, thereby violating the website
  accessibility guidelines and the creation of readily accessible materials for
  students with disabilities. As of today, both parties have not settled. However,
  Harvard University has been denied a stay in the case due to students who are
  deaf or hard of hearing falling consistently behind due to inaccessible videos
  and websites. Section 508 of the Rehabilitation Act has not been adequately
  enforced in higher education. However, with the support of the Web Content
  Accessibility Guidelines (WCAG 2.0; published in 2008) and the Assistive
  Technology Act of 2004, there are more defined guidelines and regulations for
  website designers and instructional designers to integrate accessibility features
  such as closed captions for students with disabilities. Lawsuits can result from
  inaccessible websites, online videos, and other online instructional practices
  or extracurricular activities.

Statistical Data of Increased Student Disabilities

According to Wilhelm (2003), from 1988 to 2000, the annual percentage of

students with learning disabilities increased from "16.1% to 40.4%" (p. 218). This

increase, combined with the selected cases mentioned previously, shows the urgency

of designing accessible materials to ensure all students receive equitable learning.

Nevertheless, "most higher education institutions do not accept K–12 documentation

of students' disabilities," knowledge of which could provide additional insight into

creating accessible instruction and show how to help students with disabilities

transition from K–12 to higher education (McKenzie, 2009, p. 16). In addition,

according to the National Center for Education Statistics, during the 2018–2019

school year, the number of students with disabilities (as classified by IDEA)

increased from 6.4 million to 7.1 million (representing 14% of all students in public

schools), and 33% had learning disabilities (NCES, 2020). Therefore, a steady rise in

the number of students with learning disabilities has required accessible instructional

materials per IDEA, ADA, Title II, and Section 504. However, many higher

education institutions and K–12 faculty lack proper training in the development of

accessible educational materials.

Insufficient Accessibility Training

Faculty members' lack of training and low understanding of U.S. disability

laws have often led to higher education institutions succumbing to student requests

for additional assistance stemming from preconceived disabilities. For example, in the

case of *Guckenberger v. Boston University*, students tried to sue Boston University

for withdrawing specific accommodations such as "course waivers, extended time,

and distraction-free testing sites" (Wilhelm, 2003, pp. 219–220). Because of a lack of

understanding of the law and increased concern regarding public litigation that could

result in loss of credibility and money, the university granted the students specific

amenities—thus allowing them to take advantage of the disability laws that were

enacted to protect them. However, because the students lacked documentation that

proved their disabilities, the court ruled in favor of the university, a move that could

make it difficult for incoming students with disabilities to receive the necessary

accommodations.

Likewise, the lack of understanding of components of Section 504, IDEA, and

other disability laws applying to K–12 may lead to additional lawsuits and creative

modifications to ensure accessibility and equitable learning. For instance, in the

Supreme Court case *Endrew F. v. Douglas County School District,* Drew, a fifth-

grade student documented with autism and attention deficit disorder (ADD), did not

receive appropriate learning conditions through his public school's IEP (Kamenetz &

Turner, 2017; U.S. Department of Education & IDEA, 2017). His parents removed

him from the public school and placed him in a private school that would provide

adequate, equitable education. The parents then wanted the public-school district to

pay for the tuition fees. The school district stated that it provided the minimum

requirement for FAPE for the student and was not liable for paying the tuition fees

(Kamenetz & Turner, 2017). However, the Supreme Court overruled, stating that

providing the minimum requirements is not FAPE. Therefore, the school could not

provide an equitable learning environment and must pay for the private school tuition

and fees. Subsequently, FAPE was expanded to transform the "de minimis" that

required school districts to provide minimal accommodations on IEPs to assist the

disability. Schools must provide reasonable accommodations on IEPs to "enable a

child to make progress instead of the child's circumstances" (U.S. Department of

Education & IDEA, 2017, s. Clarification of IDEA's FAPE Requirement #7).

K–12 Implementation of Section 504

School districts must still implement 504 plans to ensure that students receive

accommodations with parental consent even when it is not necessary; this approach

could save school districts in pending litigation. According to the Office of Civil

Rights (OCR), if parents or students decide to file lawsuits because accommodations

are not being met, the OCR will most likely side with the parents if 504 plans are

present (Zirkel, 2011, pp. 414–415). Perhaps, as Zirkel (2009) suggested, the creation

of 504 plans serves as a "consolation prize" for students who do not qualify for

accommodations under IDEA but may benefit from additional time on assessments

(p. 210). A service could provide accommodations to K–12 students; however, they

may not have the same privileges when they attend college, thus creating another

potential legal case about failed accommodations under ADA, in which the courts

will likely rule in favor of the institution.

Ensuring that K–12 teachers receive adequate training in disability laws and

current updates to the ADAAA and Section 504 could save teachers valuable time in

creating 504 plans and potentially decrease student litigation. Such litigation could

claim the schools violated their 504 plans, especially because higher education

institutions do not accept 504 plans or other K–12 documentation for students with

disabilities. Additional training could assist teachers in designing accessible materials

that safeguard FAPE for all students while reducing potential risks to the school.

Online Professional Development

Online professional development (OPD) is necessary to encourage faculty, K–

12 teachers, and other school staff to increase their understanding of various disability

laws and to design accessible instruction using a self-pace OPD learning

environment. In addition, by using the *Creating Accessible Instruction* OPD

materials, participants are not bound by location, pacing, or schedule conflicts to

partake in the workshop (Treacy et al., 2002; Vrasidas & Zembylas, 2004; Vu et al.,

2014). Other benefits of OPD include "increased access to meet individual learning

goals… experience with the use of technology as a learner… use of rich multimedia

resources and new technologies… anytime, anyplace learning… collaborative

learning opportunities… [and] direct impact on classroom practice" (Treacy et al.,

2002, p. 46).

The instructional model for the OPD will follow the module template used by

the Kentucky Community & Technology College System (KCTCS) Optimizing

Online Learning (KOOL) Academy. The module template uses a hybrid online model

like a blended-modified version of Merrill's "First Principles of Design" and Gagne's

"Nine Steps of Instruction" models to design effective and intentional online

instruction. According to Vrasidas and Zembylas (2004), creating a conceptual

framework is necessary to increase participant retention and success in OPD.

The *Creating Accessible Instruction* OPD will use the conceptual framework

elements of "personal and social constructivism, situated and distributed cognition,

and communities of practice" to assist in creating a structure for each module to

increase retention and success (p. 327-328). A more detailed analysis is stated below.

Personal and Social Constructivism

The OPD provides resources that may promote "knowledge construction

through social interaction and learner's mind" (Vrasidas & Zembylas, 2004, p. 327).

The OPD uses the Google Classroom platform to assist in social interaction where

learners can post comments and answer questions. Each module will have resources

that promote communication with other learners and will include several resources

for the participants to read or watch for developing their understanding.

Situated and Distributed Cognition

Participants must partake in the learning. According to Lave and Wenger

(1991), "learning is a process that takes place in a participation framework" (Lave

&Wenger, 1991; Vrasidas & Zembylas, 2004, p. 328). Therefore, each module may

contain participation-based elements for the learners to practice identifying

inaccessible material or modifying materials for accessibility. The participation-based

learning will be distributed for class use using the Google Classroom platform.

Therefore, other students may comment or ask questions for further learning.

Communities of Practice

According to Vrasidas and Zembylas (2004), communities of practice "are groups of individuals bound by what they do together and by what they have learned through their mutual engagement in these activities" (p. 328). Using Google Classroom as the massive open online course (MOOC) platform promotes the creation of the communities of practice by providing a space for educators, administrators, and other school personnel that may benefit from the training workshop. The platform offers learners space to post comments, share work, and share feedback on activities. Each module may include other Google Applications for Education (GAFE) and other non-Google educational applications that promote collaboration, critical thinking, self-reflection, authentic tasks, and social interaction.

Capstone Implementation

Educating faculty and staff of higher education and K–12 institutions in disability laws and amendments is necessary to ensure high quality, equitable learning for all students. Additionally, learning institutions could reduce their risk of student or employee litigation stemming from infringements to the rights of people with disabilities. Professional development courses are needed to increase educators' awareness of the learning disparities experienced by students with disabilities (Banks, 2019). Because of the COVID-19 pandemic, faculty and staff must develop a deeper understanding of disability laws and gain additional insight regarding generating accessible instruction for online consumption. Thus, implementing a training tool is imperative to ensure that faculty and staff receive training on disability laws,

implementations of the laws, and accessible materials designed to reduce potential

student litigation while increasing equitable learning for all. Table 1 shows a timeline

for the implementation of this capstone project.

Table 1

A Timeline for Capstone Implementation

Dates	Action
March–July 2020	Internship with KCTCS under the leadership of Dr. Simpson to discuss ADA in higher education and K–12 institutions
May 2020	Start designing instructional outline for professional development course
June–August 2020	Create training modules on Google Classroom for the *Creating ADA Instruction in the Classroom* project
July 2020	Submit proposal to present professional development course to Henderson County Schools faculty and staff
August 2020	Present APA professional development to NMS faculty and staff
September 2020	Research potential conferences to submit proposal to present professional development course
April 2021	Present proposal at KySTE 2020–2021 spring conference
April 2021	Defend capstone

Intended Impact of the Capstone

The capstone is intended to impact educator understanding and application of

the various disability laws, as well as instilling the fundamental skill development of

creating accessible instructional materials. The project goal is designing professional development courses using Google Classroom, a Google operated learning platform utilized by the majority of Kentucky's K–12 teachers. This initiative may fully train educational faculty and staff to bring about equitable learning for all students – both abled and disabled.

Further, the capstone will help NMS teachers, K–12 educators, higher education faculty, and digital learning coaches by providing additional insights into disability laws and the process of creating accessible materials. The teachers could develop a deeper understanding of the laws' impacts on their instructional strategies. In addition, faculty and staff will be encouraged to modify existing materials with the help of a digital learning coach and with professional development training to ensure equitable learning for all students.

The impact of the capstone on students, parents, and guardians will be to encourage and support equitable learning for all students. Because of the COVID-19 pandemic, part of the school year may be completed remotely; therefore, teachers' implementation of this capstone project could help decrease students' stress and frustration learning and completing online assignments. The creation of accessible materials may aid parents in helping their students with disabilities to understand new concepts and complete learning tasks.

The impact of the capstone could equip instructional designers and instructional technologists with additional insight into disability laws, accessibility, and assistive technology. Instructional designers could help ease the process of

creating online accessible materials for courses that are traditionally taught face-to-face. Instructional designers could also enhance their knowledge of designing accessible materials and reviewing faculty course pages to certify that ADA and ADAAA requirements are being met. Instructional technologists could improve their skills in developing and evaluating course sites, teacher websites, and school sites to confirm that navigation and materials are accessible and meet the requirements of WCAG 2.0 guidelines.

Limitations of the Study

The potential limitations of the study involve technology, accessibility, and behavior.

Technology

The professional development training will use Google Classroom as an instructional delivery system. As most Kentucky schools use GAFE, Kentucky teachers and staff may have less difficulty navigating Google Classroom. However, higher education faculty and staff may not have prior experience using Google Classroom. In addition, the disconnect of the model of creating implicit online instruction may not be transferable to Blackboard, the most common MOOC platform used in higher education.

Accessibility

Accessibility to the professional development tool is another potential limitation of the capstone. Because of COVID-19, schools may be closed or may have a limited admittance procedure for entry in the reopening phases, so the

professional development may only be accessible through an online training course at

home. However, if participants have minimal to no Internet capabilities or low

broadband usage, it may hinder access or lower the quality of the module, thereby

limiting the learning experience.

Moreover, content is a potential limitation of the capstone. Disability law is a

vast field, and amendments are continuously being added to aid in the protection of

people with disabilities. Therefore, it is difficult to cover all aspects of disability law

that may pertain to school systems. In addition, the professional development tool

will focus on creation of accessible instruction for equitable learning, which is only a

subpart of ADA.

Behavior

Behavior depends solely on the attitudes and willingness of the affected

audiences to modify materials or design new materials for accessibility. Even if

teachers and staff, instructional designers, or instructional technologists are required

to attend the professional development training, there are no guarantees that

participants will modify instructional materials after the professional development.

According to Cook (2007), the majority of educators in higher education promote

inclusion of students with disabilities. However, faculty members do not prioritize or

have adequate knowledge of the various disabilities and accommodations that are

necessary for academic success (Cook, 2007). The professional development courses

may assist faculty members' understanding of various disabilities and how to design

accessible instructional materials, however, it is up to the faculty members to make

creating accessible instructional materials a priority for improvement.

Reflections

The doctoral capstone process has been a whirlwind experience. When I

began the process, I had a different topic about incorporating authentic learning in the

K–12 schools. But then COVID-19 happened, and everything changed. COVID-19

was the pandemic that stopped the world and my original capstone. However, during

these difficult times, I was reminded of these two Bible verses that summarize my

doctoral capstone process: "For I know the plans I have for you, declares the Lord,

plans to prosper you and not to harm you, to give you a hope and a future" (New

International Version, Jeremiah 29:11); and "To everything there is a season, A time

for every purpose under Heaven… A time to plant, and a time to pluck what is

planted" (New King James Version, Ecclesiastes 3:1-2).

The quote from Jeremiah 29:11 always played an integral part in my life. That

came to the surface when I received an internship with Dr. Simpson. The internship

was to learn more about accessibility. Throughout my research into accessibility and

disabilities, I became passionate about learning about the different disability laws, the

history, and how to create accessible instruction. I believe that gaining the internship

and identifying a new passionate area of research was not a coincidence. For He knew

what was coming and was preparing me to switch capstones.

The Ecclesiastes verse embodies my capstone project. Due to COVID-19, the

restrictions on in-person learning and social distancing made my original capstone

unfeasible. However, it shined a light on how K–12 educators, including myself and

non-online higher education faculty, were ill-prepared to convert paper and pencil

instruction to an online capacity. Also, by the increase of lawsuits and parents'

outrage about accessibility for students with disabilities who need FAPE, it became

increasingly clear that professional development is needed to train teachers, faculty,

and instructional designers about creating accessible instructional material for digital

and traditional learning. This is the time to use my research to assist educators and

instructional designers to gain a deeper understanding of the various disability laws

that pertain to education and provide guidelines to create accessible instruction for all

students.

The completion of the *Creating Accessible Instruction* OPD may be the

ending of my doctoral capstone journey, but I believe that it would open the door for

additional opportunities to share my knowledge and expertise of accessibility to

others. My hope is that the capstone project will plant seeds of knowledge for other

educators who may produce accessible instructional materials, so that establishing a

synchronous and asynchronous learning environment that is accessible to all students

will be the new norm.

Capstone Project

Curriculum Framework

Rationale

As mentioned previously, it is imperative that teachers, faculty, and other school staff have adequate training in understanding the disability laws pertaining to education and creation or modification of instructional materials for accessibility. Therefore, professional development is needed to assist teachers, faculty, and others who design or implement instruction to have the proper checklists and strategies to integrate accessibility features in their curriculum.

Due to COVID-19, there has been a significant increase in remote learning. Professional development is designed to be a self-paced online training course equal to a six-hour professional development course. The training uses Google Classroom (GC) as the learning management system (LMS), Google Apps for Education (GAFE), and Microsoft Office Suite to disseminate presentations, assignments, questions, discussion boards, and assessment.

Purpose

The *Creating Accessible Instruction* OPD is designed to provide a brief overview of the disability laws that pertain to education and to serve as a guide to the creation and modification of instructional materials for accessibility. The training will consist of a starting point, four modules, an exit exam, and additional classroom resources. The main purpose is to equip educators, instructional designers, and instructional technologists in K–12 and higher education with skills and knowledge of

disability laws in education to design accessible instructional materials or modify

existing instructional materials for accessibility. The topics were created based on a

developmental sequence. It is necessary to complete the topics for developing

understanding. The following is the breakdown of the classroom with a screen shot

image that correlates with each topic.

1. **Start Here**

2. **Module 1: Disability Laws**

3. **Module 2: Text Documents**

→ Module 2: Text Documents   ⋮

📖 🟦 Accessible Design: Text Design	Posted Feb 22	⋮
📋 Accessible Google Document K-12 Task 1	Posted Feb 22	⋮
📋 Accessible Google Document Task 2	Posted Feb 22	⋮
📋 Your Turn: Creating Accessible Text Docu…	Posted Feb 22	⋮
📖 ☐ Module 2 References	Posted Feb 22	⋮

4. **Module 3: Multimedia Presentations**

→ Module 3: Multimedia Presentations   ⋮

📖 🟦 Accessible Design: Multimedia Presenta…	Edited 7:52 PM	⋮
📋 Alternative Text Image Task 3	Posted Feb 22	⋮
📋 Accessible Multimedia Presentation Task 4	Edited Feb 22	⋮
📋 Your Turn: Creating Accessible Multimedi…	Posted Feb 22	⋮
📖 ☐ Module 3 References	Edited Feb 22	⋮

5. **Module 4: Websites**

→ Module 4: Websites ⋮

📖	🔡 Accessible Design: Websites	Posted Feb 22	⋮
❓	✋ Identify one of the WCAG's Robust Princ...	Posted Feb 22	⋮
❓	✋ Identify one of the WCAG's Understanda...	Posted Feb 22	⋮
❓	✋ Identify one of the WCAG's Operable Pri...	Posted Feb 22	⋮
❓	✋ Identify one of the WCAG's Perceivable ...	Posted Feb 22	⋮
📖	▢ Module 4 References	Posted Feb 22	⋮

6. **Exit Exam**

Exit Exam

Creating Accessible Instructional Materials Exit Exam

* Required

Email address *

Your email

First and Last Name *

Your answer

What does the acronym IDEA stand for? *   1 point

○ Individualize Development Education Agency

○ Individual Disability Education Act

○ Identity Design Empowerment Act

○ Ingenious Design Educational Amendment

7. **Classroom Resources**

Objectives

As described in the Creating Accessible Materials presentation from the Start

Here module, the following are the overall objectives, with an image depiction of the

slide.

Participants will be able to:

- Identify the disability laws in education.

- Identify inaccessible elements from instructional materials.

- Identify Web Content Accessibility Guidelines (WCAG 2.0).

- Modified existing instructional materials for accessibility.

- Discuss accessibility elements of instructional materials and websites.

Objectives of the Online Professional Development

Participants will be able to:

- Identify the disability laws in education.
- Identify inaccessible elements from instructional materials.
- Identify Web Content Accessibility Guidelines (WCAG 2.0)
- Modified existing instructional materials for accessibility.
- Discuss accessibility elements of instructional materials and websites.

Instructional Model

The OPD uses an experience-based student-designed instructional model. The students can learn through presentations and hands-on experiences. Some of the learning activities require students to modified existing instructional materials for accessibility and to modify or create their own instructional material for accessibility, as illustrated by the two screen shot images below, respectively.

- Modify an existing text document for accessibility task:
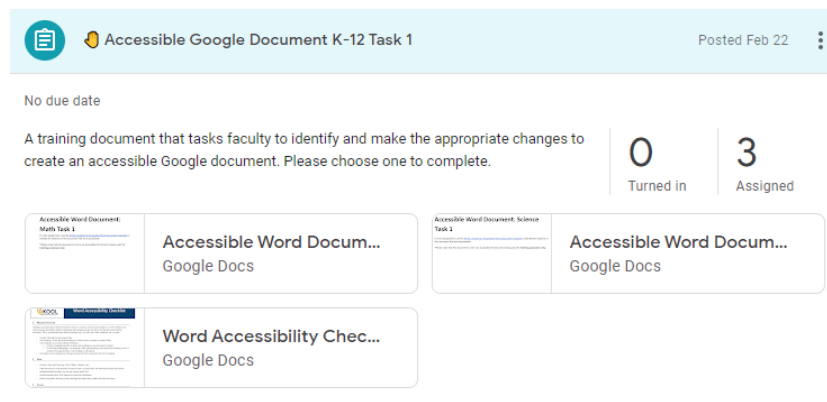
- Create your own or modify one of your instructional text documents for accessibility task:

Module Overview

Module 1: Disability Laws

Module 1 Objectives:
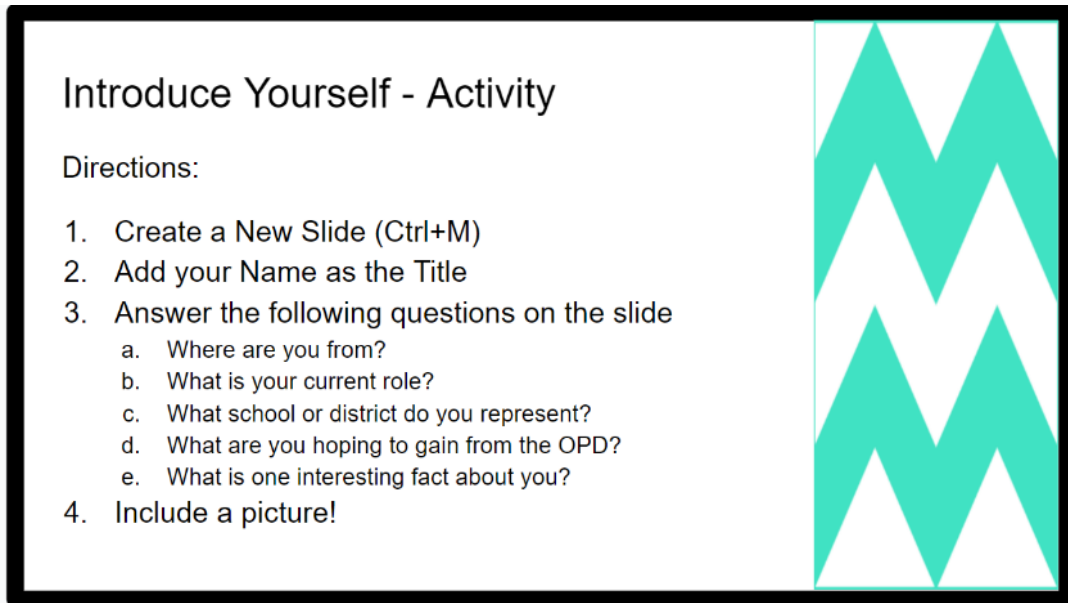
- Identify disability laws in education

Module 1 Presentations:

- Accessibility 101: IDEA Presentation

- Disability Laws in K–12 Education

- Disability Laws in Higher Education

- Accessible Design: POUR Method

Module 1 Tasks:

Module 1 begins with an **introduce yourself activity.** The activity is a Google slide deck that encourages participants to introduce themselves and potentially find networking opportunities to work with other teachers in their field. The following image depicts the directions of the slide deck.
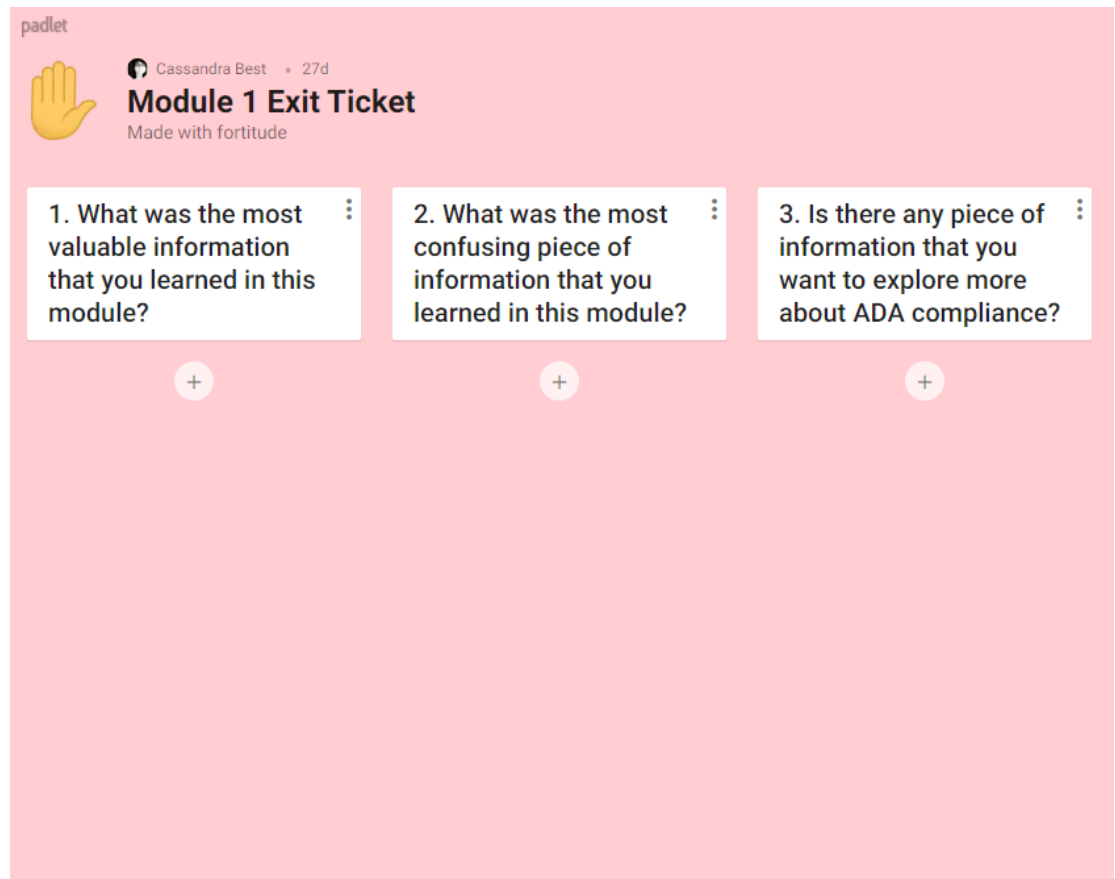
The last task is a Padlet discussion board that asks the following questions:

1. What was the most valuable information that you learned in this

   module?

2. What was the most confusing piece of information that you learned in

   this module?

3. Is there any piece of information that you want to explore more about

   ADA compliance?

The purpose of the assignment is to identify the most valuable piece of

information, the most confusing piece of information, and any additional

information needed to understand ADA compliance.

- A screen shot image of the Padlet assignment.

Module 2: Text Documents

Module 2 Objectives:

- Identify inaccessible elements from instructional materials.

- Modified existing instructional materials for accessibility.

- Discuss accessibility elements of instructional materials.

Module 2 Presentation:

- Accessible Design: Text Documents

Module 2 Tasks:

The first task of Module 2 is a student choice to identify the inaccessible elements of a math text document or a science text document. The purpose of the task is to provide participants with an inaccessible document to assess their ability to identify the elements of the document that are inaccessible and make the necessary adjustments to make the document accessible. The participants can use the KOOL Academy's word document checklist to assist in identification.

- A screen shot image of the task 1 math document.

Dividing Fractions				
Steps	Fraction by Fraction	Whole Number by Fraction	Fraction by Whole Number	Mixed Number by Mixed Number
Step 1: Convert whole numbers to fractions, change mixed numbers to improper fractions.	$\frac{3}{4} \div \frac{1}{4}$	$3 \div \frac{1}{4}$	$\frac{1}{4} \div 3$	$6\frac{1}{3} \div 2\frac{7}{8}$
Step 2: Find the Reciprocal (inverse/flip) of the 2nd number (divisor)				
Step 3: Replace the division symbol with a multiplications symbol.				
Step 4: Multiply the fractions.				
Step 5: Simplify. If needed, convert to a mixed number or whole number.				

The second task requires participants to provide alternative text descriptions to various images using a Google Jamboard. The purpose of the activity is to provide participants an opportunity to practice creating alternative text descriptions.

- A screen shot image of the Jamboard.

Alternative Text Practice: An Example
Using a sticky note create a descriptive alt. text for each of the images.
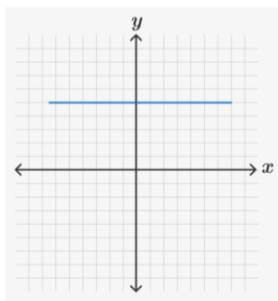
A blue horizontal line on a coordinate plane running perpendicular to the x-axis displaying y=5.

The last task requires participants to create or modify one of their own instructional text documents for accessibility. The purpose of the task is to encourage participants to apply the accessibility guidelines to their own instructional text documents. Also, the participants will have an opportunity to provide constructive feedback using the discussion board.

- A screen shot image of the discussion board.

Module 2: Accessible Text Documents				
Directions for post: Find an instructional text document that you use in the classroom and modified the text document using the POUR method and the Word Accessibility Checklist. Upload and label the modified accessible text document.				
Directions for responses: Choose at least one of the modified accessible text document(s) and provide constructive feedback on accessibility and ways to improve accessibility.				
Click on the row you want to respond to and click the respond button. New comments go in column C. Responding to the previous person directly, place comments in column D. Suggestion to click on Column F when you reply.				
Email Address	Name or Alias	Link to Modified Text Document	Response to Comment	Click Here to Respond

Module 3: Multimedia Presentations

Module 3 Objectives:

- Identify inaccessible elements from instructional materials.

- Modified existing instructional materials for accessibility.

- Discuss accessibility elements of instructional materials and websites.

Module 3 Presentations:

- Accessible Design: Multimedia Presentations

Module 3 Tasks:

The third task requires participants to embed alternative text descriptions into a couple of images using a Google Docs, Google Slides, and PowerPoint. The purpose of the activity is to provide participants an opportunity to practice embedding alternative text descriptions on images on a variety of platforms.

- A screen shot image of Task 3.

The fourth task is a student choice to identify the inaccessible elements of a math or an ELA (English Language Arts) multimedia presentation. The tasks use Google Slides platform; however, the presentations may be downloaded to a Microsoft PowerPoint if needed. The purpose of the task is to provide participants with an inaccessible document to assess their ability to identify the elements of the document that are inaccessible and to make the necessary adjustments to make the document accessible. The participants can use the KOOL Academy's word document checklist to assist in identification.

- Screen shot images of the task math presentation.
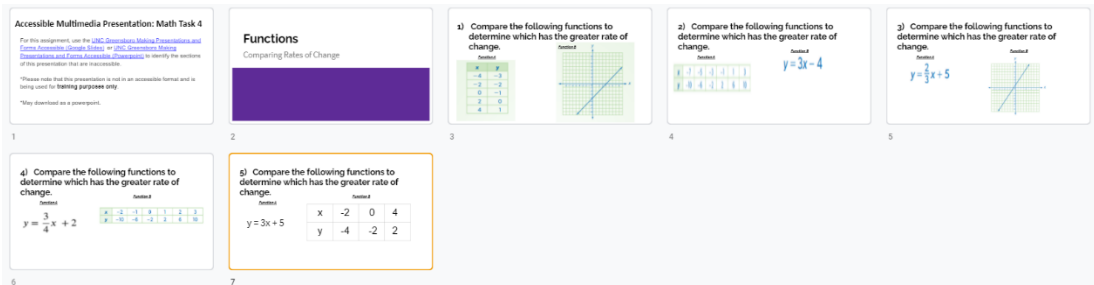
The last task requires participants to create or modify one of their own instructional multimedia presentations for accessibility. The purpose of the task is to encourage participants to apply the accessibility guidelines to their own instructional multimedia presentations. Also, the participants will have an opportunity to provide constructive feedback using the discussion board.

- A screen shot image of the discussion board.

Module 3: Accessible Multimedia Presentation				
Directions for post: Find an instructional multimedia presentation that you use in the classroom and modified the presentation using the SLIDE method and the Making Google Slides or Making Powerpoint Accessible Checklist. Upload and label the modified accessible multimedia presentation.				
Directions for responses: Choose at least one of the modified accessible multimedia presentation(s) and provide constructive feedback on accessibility and ways to improve accessibility.				
Click on the row you want to respond to and click the respond button. New comments go in column C. Responding to the previous person directly, place comments in column D. Suggestion to click on Column F when you reply.				
Email Address	**Name or Alias**	**Link to Modified Text Document**	**Response to Comment**	Click Here to Respond

Module 4: Websites

Module 4 Objectives:

- Identify Web Content Accessibility Guidelines (WCAG 2.0).

- Discuss accessibility elements of websites.

Module 4 Presentations:

- Accessible Design: Websites

Module 4 Questions

In Module 4, participants will be required to answer the following four questions about WCAG guidelines. The purpose of answering these questions is to encourage participants to further their learning and understanding of the WCAG 2.0 guidelines and their significance to accessibility. Since the professional development course is designed for six hours and the focus of the OPD is creating accessible instructional materials, it is imperative that the design focus on Modules 2 and 3, and

the brief introduction of web accessibility are discussed. The following are the

essential questions for Module 4:

1. Identify one of the WCAG's Perceivable Principle guidelines and describe its

   significance to accessibility.

2. Identify one of the WCAG's Operable Principle guidelines and describe its

   significance to accessibility.

3. Identify one of the WCAG's Understandable Principle guidelines and describe

   its significance to accessibility.

4. Identify one of the WCAG's Robust Principle guidelines and describe its

   significance to accessibility.

Exit Exam

The culminating assignment is composed of 20 multiple choice and short

answer questions that assess the participants' understanding of the disability laws,

accessible design for text, multimedia presentations, and websites. The exam is a

Google Form that will provide instant feedback. The participants must score at least

an 80% to successfully pass the course. Upon successful completion, the participants

will receive a certificate that will be emailed to them within 24 hours.

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VITA

CASSANDRA C. BEST

<u>EDUCATION</u>

May 2013   Bachelor of Science
                     Kentucky Wesleyan College
                     Owensboro, Kentucky

July 2017   Master of Arts in Education
                     Morehead State University
                     Morehead, Kentucky

Pending   Doctor of Education
                     Morehead State University
                     Morehead, Kentucky

<u>PROFESSIONAL EXPERIENCES</u>

2019–2020   KCTCS Instructional Design Intern
                     Kentucky Community and Technical College System
                     Lexington, Kentucky

2018–Present   Eighth-Grade Math Teacher
                     North Middle School
                     Henderson, Kentucky

2016–2018   Sixth-Grade Math Teacher
                     North Middle School
                     Henderson, Kentucky

2015–2016   Secondary Math Teacher
                     Henderson County High School
                     Henderson, Kentucky

2014–2015   Sixth-Grade Math Teacher
                     North Middle School
                     Henderson, Kentucky

2013–2014   Fifth Grade Accelerated and Intermediate Math Teacher
                     Deer Park Elementary
                     Owensboro, Kentucky

2013   Middle School Math and Social Studies Student Teacher
                             Owensboro Middle School (South Campus)
                             Owensboro, Kentucky

HONORS

2020   Educational Technology Doctoral Student of the Year
                             Morehead University
                             Morehead, Kentucky

2019   KySTE Community Outreach Grant Recipient
                             Kentucky Society for Technology in Education
                             Louisville, Kentucky

2013   National History Society Inductee
                             Phi Theta Alpha
                             Owensboro, Kentucky

2012   Who's Who Among American Universities and Colleges
                             American Achievement Corporation
                             Austin, Texas

2012–2013   Oak and Ivy Nominee
                             Kentucky Wesleyan College
                             Owensboro, Kentucky

2009   National Volunteer Award for Youth Group Leader
                             Fort Knox Military Defense
                             Fort Knox, Kentucky

PUBLICATIONS

Best, C. (2019, October). *Using Khan Academy Mappers for math differentiation*.
        Paper presented at the 2019 Annual Proceedings of the Association for
        Educational Communications Technology, Las Vegas, NV.
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