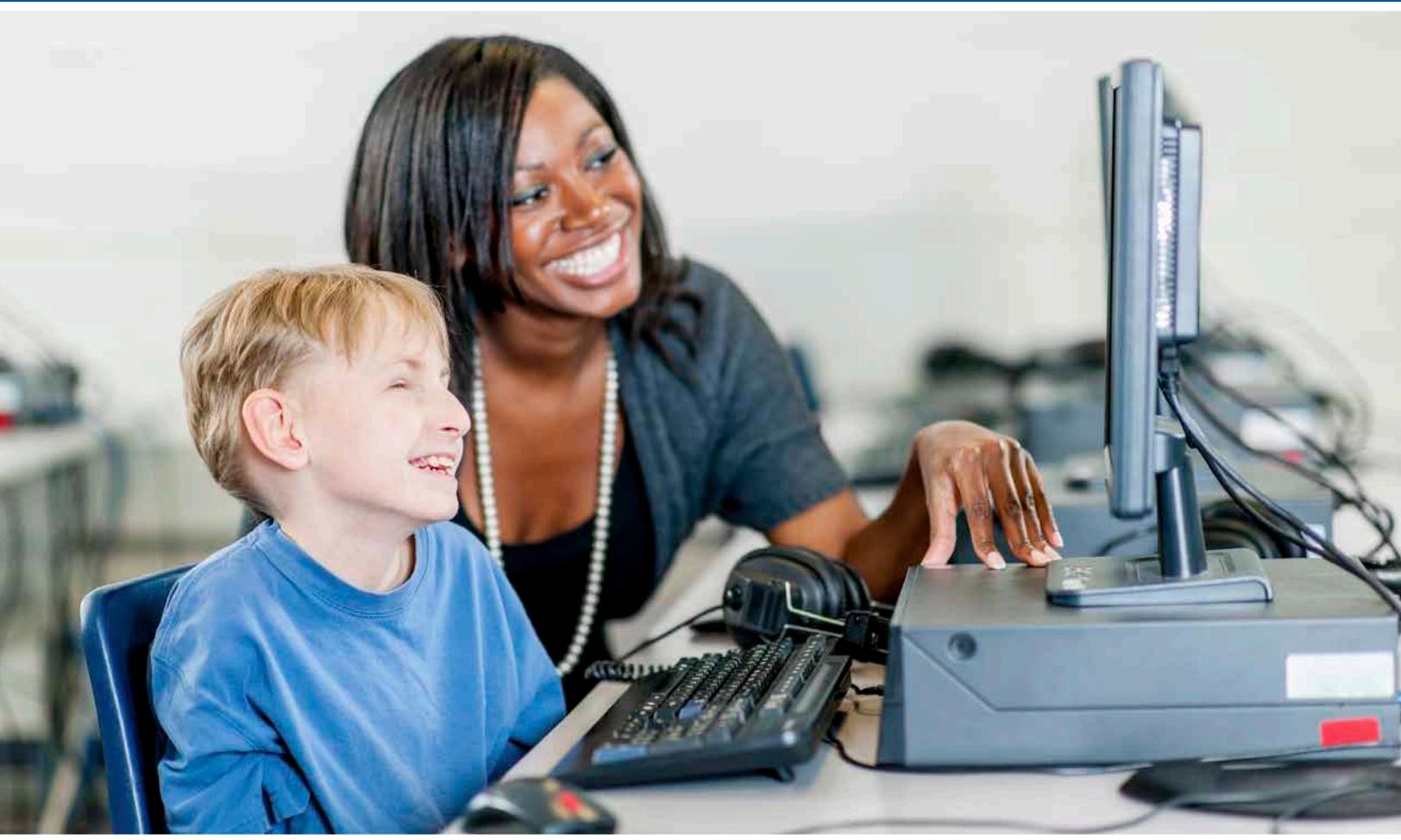


# Access and Equity for All Learners in Blended and Online Education



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*iNACOL, The International Association for K-12 Online Learning,*  
<http://www.inacol.org/>

The mission of the International Association for K-12 Online Learning (iNACOL) is to ensure all students have access to a world-class education and quality blended and online learning opportunities that prepare them for a lifetime of success. iNACOL is a non-profit organization focused on research; developing policy for student-centered education to ensure equity and access; developing quality standards for emerging learning models using online, blended, and competency-based education; and supporting the ongoing professional development of classroom, school, district and state leaders for new learning models. **Learn more at [www.inacol.org](http://www.inacol.org).**

## Table of Contents

<b>OVERVIEW</b>	<b>4</b>
<b>PURPOSE</b>	<b>4</b>
<b>INTRODUCTION</b>	<b>5</b>
<b>THE STANDARDS</b>	<b>8</b>
<b>COURSE DESIGN CONSIDERATIONS</b>	<b>10</b>
<b>COURSE INSTRUCTOR’S ROLE</b>	<b>11</b>
<b>ADMINISTRATOR’S ROLE</b>	<b>12</b>
<b>EQUITY ISSUES</b>	<b>13</b>
<b>MONITORING</b>	<b>14</b>
<b>OFFICE FOR CIVIL RIGHTS FINDINGS</b>	<b>15</b>
<b>ADDITIONAL ISSUES</b>	<b>17</b>
<b>SUMMARY</b>	<b>18</b>
<b>APPENDIX I: FEDERAL AND STATE LEGAL REQUIREMENTS FOR EQUAL EDUCATIONAL OPPORTUNITY AND ACCESS</b>	<b>19</b>
<b>APPENDIX II</b>	<b>21</b>
<b>APPENDIX III</b>	<b>22</b>
<b>APPENDIX IV: RESOURCES</b>	<b>25</b>



# Access and Equity for All Learners in Blended and Online Education

## Overview

Online education has become an accepted part of the educational landscape over the past two decades. Digital resources are the norm in classrooms. Online learning models are changing the way people think about learning. The expectation is that all students will benefit from technology some way. In order for that to be the case, however, sometimes more overt action is needed to ensure that all students do in fact get full benefit of digital resources and online learning.

Equity in education has been a basic tenet of public education in the United States, made explicit by civil rights legislation beginning with passage of Title VI of the Civil Rights Act of 1964<sup>1</sup> and the 1965 Elementary and Secondary Education Act (ESEA). Subsequently, Section 504 of the Rehabilitation Act of 1973, the 1990 Americans with Disabilities Act,<sup>2</sup> and the Individuals with Disabilities Education Act<sup>3</sup> in 2004 ensured civil rights protection for people with disabilities.

Unfortunately, legislation alone does not guarantee that all students will be provided with the access and equity necessary to take full advantage of the educational opportunities all students are entitled to. The increasing role of technology to deliver content and instruction presents challenges for all educational programs, including blended and online learning. The goal of this publication is to raise awareness amongst educators, especially those in the blended and online community, of the importance of ensuring that all students are able to take advantage of all educational opportunities available to them.

## Purpose

The purpose of this publication is to provide guidance, direction, and resources to help programs meet their moral, ethical, and legal obligations to best ensure all students have access to the educational opportunities provided for them in online and digital learning.

The 2007 publication *Access and Equity in Online Classes and Virtual Schools* was one of the first publications to address the issue. INACOL (NACOL at the time) also published the first version of the *National Standards for Quality Online Courses* that included access. Since that time, access has been included in the three current INACOL National

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<sup>1</sup> <http://www2.ed.gov/about/offices/list/ocr/docs/hq43e4.html>

<sup>2</sup> <http://www2.ed.gov/about/offices/list/ocr/docs/hq9805.html>

<sup>3</sup> <http://idea.ed.gov/>

Standards—for Quality Online Courses,<sup>4</sup> Quality Online Teaching,<sup>5</sup> and Quality Online Programs<sup>6</sup>—as well as in the standards developed by Quality Matters and Sloan-C.

Over the past few years, the United States Department of Education’s Office for Civil Rights (OCR) has taken more interest in online education. As a result of OCR compliance monitoring, complaint investigation, and actions by the United States Department of Justice (DoJ), we now have a much clearer picture of what educational institutions need to do to meet their obligations under civil rights legislation.

We have incorporated the latest information from OCR, DoJ, and other organizations, including the National Federation of the Blind, for this publication to provide schools with the most comprehensive view yet available on what access and equity looks like for blended and online learning in K–12 and higher education.

Our goal is to ensure that all students have access to a world-class education and quality blended and online learning opportunities that prepare them for a lifetime of success—no matter their economic situation, their geographic location, or disability.

## Introduction

Online learning, where instruction is delivered primarily over the internet<sup>7</sup>, is leading the transformation of public education in the United States. Since online schools began in the mid-90s, thousands of programs have been created, ranging from small programs within a local school, to online schools, to state-wide programs, multi-state, and international programs. All of these online learning programs can be categorized under the umbrella of distance education.

In addition, a growing cadre of schools are transforming teaching and learning through blended learning. Horn and Staker define blended learning as “... any time a student learns, at least in part, at a supervised brick-and-mortar location away from home and, at least in part, through online delivery with some element of student control over time, place, path, and/or pace. The modalities along each student’s learning path within a course or subject are connected to provide an integrated learning experience” (Horn & Staker, 2013). Blended learning enables highly personalized, competency-based learning environments, allowing educators to focus on helping students learn in the ways that work best for them. This is beneficial for all students, and in particular, it provides new possibilities for personalizing and accommodating learning environments for students with disabilities.

There have been significant changes in the online learning environment since 2007, when iNACOL published *Access and Equity in Online Education Courses and Programs*. At the time, civil rights enforcement was at a different stage; the federal enforcement agencies were just starting to realize the growth and scope of online education.

In 2007, there was little research on the issues of access and equity in online learning. At that time, we knew of only one district with a citation for non-compliance in online education. They had created a policy denying all students with disabilities access to online education programs. The concerns identified in the 2007 publication have proved valid, based on the findings reported in current complaints and compliance monitoring by OCR.

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<sup>4</sup> [http://www.inacol.org/cms/wp-content/uploads/2012/09/iNACOL\\_CourseStandards\\_2011.pdf](http://www.inacol.org/cms/wp-content/uploads/2012/09/iNACOL_CourseStandards_2011.pdf)

<sup>5</sup> [http://www.inacol.org/cms/wp-content/uploads/2012/09/iNACOL\\_TeachingStandardsv2.pdf](http://www.inacol.org/cms/wp-content/uploads/2012/09/iNACOL_TeachingStandardsv2.pdf)

<sup>6</sup> <http://www.inacol.org/cms/wp-content/uploads/2012/09/iNACOL-Standards-Quality-Online-Programs.pdf>

<sup>7</sup> iNACOL. (October 2011). *The Online Learning Definitions Project*. [http://www.inacol.org/cms/wp-content/uploads/2013/04/iNACOL\\_DefinitionsProject.pdf](http://www.inacol.org/cms/wp-content/uploads/2013/04/iNACOL_DefinitionsProject.pdf)

Experience with civil rights issues increases awareness of the access and instructional issues that occur when schools take actions without considering the impact on students of a particular race, ethnicity, gender, disability, or because they are English Language Learners. Sometimes the actions are intentional; many times, the results are unintended. From a legal perspective, it is the result that is important. However, overt action can result in separate legal action in the form of a legal suit from the aggrieved parties.

Many teacher preparation and educational leadership programs lag behind when it comes to issues of equity. They may address the historic decisions of *Brown v. Board of Education*,<sup>8</sup> and *LAU v. Nichols*,<sup>9</sup> or only address civil rights issues as current events when problems are reported in the conventional media. Unfortunately, because there are so many topics and requirements that teacher preparation programs must meet, there has been little incentive or interest in adding information on current civil rights legislation, and that is unlikely to change until there is more pressure through accreditation standards. Therefore, teachers or administrators may not already be aware of or understand the issues addressed in this publication.

Some educators believe online education is free from biased actions that occur in face-to-face settings because they cannot see the student, and therefore, they believe they do not have a bias against any student.<sup>10</sup> There is still little research on the issue of access for students with disabilities in online education, especially at the K–12 level. However, the U.S. Department of Education’s Office of Special Education Programs is concerned. They funded the creation of the Center on Online Learning and Students with Disabilities,<sup>11</sup> which is conducting and identifying research on issues of access for students with disabilities. There continue to be problems with access and equity in online education, which will be presented later in this publication.

Federal laws prohibiting discrimination on the basis of disability are not limited to dealing with bias. As the U.S. Supreme Court explained in the 1985 decision for *Alexander v. Choate*: “Discrimination against the handicapped was perceived by Congress to be most often the product, not of invidious animus, but rather of thoughtlessness and indifference—of benign neglect.” Congress responded to this problem by requiring schools and other entities to “rectify the harms resulting from action that discriminated by effect as well as by design” to ensure access.<sup>12</sup>

Over the past seven years, enforcement of civil rights legislation in online education has changed. Regarding accessibility of online educational materials, advocacy groups, such as the National Federation of the Blind, have filed complaints, predominantly against online programs in higher education. The U.S. Department of Education’s Office for Civil Rights (OCR) has conducted compliance monitoring in online education, both in higher education and in K–12 online schools. The U.S. Department of Justice (DoJ) is enforcing the Americans with Disability Act (ADA) and investigating complaints in the areas of web accessibility.

The broad range of approaches and pedagogies used within distance education programs, ranging from fully online schools to supplemental course programs and to blended learning environments, and now schools that make online classes an alternative to closing school for bad weather, makes it difficult to talk about online education as a monolithic concept.

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<sup>8</sup> <http://www.uscourts.gov/educational-resources/get-involved/federal-court-activities/brown-board-education-re-enactment/history.aspx>

<sup>9</sup> <http://www2.ed.gov/about/offices/list/ocr/ell/la.html>

<sup>10</sup> <http://www.tolerance.org/magazine/number-37-spring-2010/feature/i-don-t-think-i-m-biased>

<sup>11</sup> <http://centeronlinelearning.org/>

<sup>12</sup> <http://supreme.justia.com/cases/federal/us/469/287/case.html#295>

The issues of access and equity have implications for every blended and online learning program. Access traditionally refers to both how and which students are allowed, by policy, practice, or technology, to enroll in a course or program. Equity is about the achievement of fairness in education, and in meeting the specific needs of specific students.<sup>13</sup>

The Office for Civil Rights (OCR) for the U.S. Department of Education is now using a definition of accessibility which is based on civil rights legislation and case law; because OCR is the primary enforcement agency, we need to pay attention to their definition.

On May 26, 2011, OCR issued a Frequently Asked Questions (FAQ) document.<sup>14</sup> The FAQ confirmed that the civil rights accessibility requirements apply to all disabilities (including specific learning disabilities) that affect the ability to use printed materials (Question 2); that it applies to elementary and secondary schools, as well as higher education (Question 4); that it applies to all faculty and staff (Question 5); that it applies to all forms of emerging technology, including online courses, Web mail systems, and other online content (Questions 6 and 7); that it applies to pilot programs and short-term programs (Question 8); and that it applies even when no students with visual impairments are currently enrolled (Question 9).

The 2011 FAQ provided further assistance in determining what constituted “fully accessible” technology:

- Judging whether a technology is accessible is a functional inquiry. To be accessible, students with disabilities “must be afforded the opportunity to acquire the same information, engage in the same interactions, and enjoy the same services” as students without disabilities (Question 1).
- If an entity is proposing to meet its accessibility obligations by providing different technology or through other accommodations or modifications, the entity can meet its obligation only if students with disabilities can obtain the “educational opportunities and benefits” provided by the use of technology “in a timely, equally effective, and equally integrated manner” (Question 10).

To meet that obligation:

- The technology/accommodation must provide students with disabilities “all the educational opportunities and benefits that are available” to students without disabilities (Question 11). The technology/accommodation must offer students with disabilities “substantially equivalent ease of use.” Although it need not offer the “identical ease of use” as students without disabilities have, the technology cannot make it more difficult for students with disabilities to obtain the benefits and opportunities than students without disabilities (Questions 1, 14);

and

- The technology/accommodation must offer all the educational opportunities and benefits “in as timely a manner as those provided to students without disabilities.” A technology/accommodation that is only available at certain times (such as an aide to read to the student) will not be sufficient where other students have access to the same information at any time and any location, as is the case with an electronic book, website, or other on-line content (Questions 11, 14).

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<sup>13</sup> [http://en.wikipedia.org/wiki/Educational\\_equity](http://en.wikipedia.org/wiki/Educational_equity) retrieved 8/19/2013

<sup>14</sup> <http://www2.ed.gov/about/offices/list/ocr/docs/dcl-ebook-faq-201105.html>

In summary, in compliance monitoring and complaint resolutions, OCR defines accessible as:

*“those with a disability are able to acquire the same information and engage in the same interactions—and within the same time frame—as those without disabilities.”<sup>15</sup>*

Even though there are different approaches to online and blended education, and significant program differences, this publication describes activities, policies, and practices that every class, course, and program using digital tools and resources should undertake to ensure all students have access to the educational opportunities available to them. And, it is important to note, that while this publication was written for the K–12 population in the United States, the laws apply equally to higher education institutions, which, up to this point, have interpreted these laws differently.

It is valuable to recognize most personnel involved in online education have not had training in the importance of accessibility or how to ensure digital materials are accessible. Informal surveys of instructional design and teacher preparation programs across the U.S. have found the majority does not address digital access in any significant way. Most teacher preparation faculty are not aware of the legal requirements for serving students with disabilities, and most higher education institutions are not compliant in serving their own online students with disabilities. Also, it is not considered a significant topic in educational leadership degree programs. This publication will hopefully bring the attention to the issue that it deserves.

## The Standards

There are different responsibilities, actions, and issues surrounding access and equity based on the role(s) an individual has in the delivery of digital learning. The roles are highlighted to make them easier to find:

***Course Designer***

***Instructor***

***Program Administrator/Manager***

iNACOL has published national standards for quality online teaching, online programs, and online courses since 2007. Access and equity have always been included in these standards because the need to ensure student access and equity is not something new.<sup>16</sup> iNACOL standards address access and equity in this way:

### ***Course Designer***

iNACOL National Standards for Quality Online Courses<sup>17</sup>

#### ***Accessibility***

Course materials and activities are designed to provide appropriate access to all students. The course, developed with universal design principles in mind, conforms to the U.S. Section 504 and Section 508 provisions for electronic and information technology, as well as the W3C’s Web Content Accessibility guidelines (WCAG 2.0).

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<sup>15</sup> OCR Compliance Review 11-11-2128, 06121583, paraphrased from 11-13-5001, 10122118, 11-11-6002

<sup>16</sup> For more about the iNACOL efforts on quality assurance, go to <http://www.inacol.org/our-work/strategic-priorities/quality-assurance/>.

<sup>17</sup> iNACOL National Standards for Quality Online Courses, [http://www.inacol.org/cms/wp-content/uploads/2013/02/iNACOL\\_CourseStandards\\_2011.pdf](http://www.inacol.org/cms/wp-content/uploads/2013/02/iNACOL_CourseStandards_2011.pdf)

## Instructor

iNACOL National Standards for Quality Online Teaching<sup>18</sup>

### Standard F: Teacher Knowledge and Understanding

The online teacher knows and understands legal mandates stipulated by the Americans with Disabilities Act (ADA), the Individuals with Disabilities Education Act (IDEA), the Assistive Technology Act, and Section 508 (of the Rehabilitation Act of 1973), or other similar guidelines/requirements for accessibility.

## Program Administrator/Manager

iNACOL National Standards for Quality Online Programs<sup>19</sup>

### Standard H: Equity and Access

A quality online program's policies and practices support students' ability to access the program. Accommodations are available to meet a variety of student needs.

- Policies clearly state eligibility requirements for the program.
- Policies and practices are in place that provide accommodations for students with disabilities.
- Policies ensure that students have equitable access to the program consistent with its mission and purposes.

The quality standards provide an important baseline for programs, courses, and educators to follow. However, the standards are voluntary. Moreover, it is up to educators, course designers, and program administrators to understand and properly adhere to any legal requirements and best practices. Unless there is a thorough understanding of the legal issues referenced and the specific implementation of those laws and guidelines, course developers and third-party providers may make inaccurate claims regarding the accessibility of online schools and courses.

## Universal Design for Learning

UDL is a set of principles for curriculum development that give all individuals equal opportunities to learn.

UDL provides a blueprint for creating instructional goals, methods, materials, and assessments that work for everyone—not a single, one-size-fits-all solution, but rather flexible approaches that can be customized and adjusted for individual needs.

Three primary principles guide UDL and provide structure to instructional activities.

- I. Provide Multiple Means of Representation
- II. Provide Multiple Means of Action and Expression
- III. Provide Multiple Means of Engagement

For more information on UDL, go to: <http://www.cast.org/udl/index.html>

CAST (2011). Universal Design for Learning Guidelines version 2.0. Wakefield, MA: Author.

<sup>18</sup> iNACOL National Standards for Quality Online Teaching [http://www.inacol.org/cms/wp-content/uploads/2013/02/iNACOL\\_TeachingStandardsv2.pdf](http://www.inacol.org/cms/wp-content/uploads/2013/02/iNACOL_TeachingStandardsv2.pdf)

<sup>19</sup> iNACOL National Standards for Quality Online Programs <http://www.inacol.org/cms/wp-content/uploads/2013/02/iNACOL-Standards-Quality-Online-Programs.pdf>

# Course Design Considerations

## Course Designer

The course design standard is the starting point for creating accessible courses. The iNACOL standard references universal design for learning,<sup>20</sup> and expects that courses have been designed with those principles in mind. It also expects courses to conform to federal law in both Section 504<sup>21</sup> and Section 508<sup>22</sup> of the Rehabilitation Act of 1973. There is also an assumption—by the reference to WGAC 2.0—that it conforms to Title II of the Americans with Disabilities Act of 1990.<sup>23</sup>

From a course design perspective, every course should be designed so a student with a disability is able to access the course and take full advantage of the learning opportunity provided in the same way as a student without a disability.

Universal design for learning (UDL) is an outgrowth of the architectural universal design concept. The architectural standard has resulted in the wide use of curb-cuts on sidewalks. Curb-cuts have much greater use than just helping people in wheelchairs move along on sidewalks—they provide convenience and safety for anyone trying to cross the street, and for those conveying wheeled objects, such as luggage or a dolly. Similarly, applying UDL concepts has proven benefits to improved learning for non-disabled people; for example, captioning video helps people without disabilities better understand the dialog and follow the message. However, it is also important to note that applying UDL standards to course design does not ensure full legal compliance for issues of accessibility.

It is incumbent on course designers to gain an understanding of the tools students with disabilities use to access information on a computer. A screen reader does what the name describes: it will speak text that appears on a computer screen. Screen readers cannot read graphics, nor can they provide a narrative for a video, so it falls to the course designer to include a way for a student with a screen reader to interact with the content. Also, because screen readers read from left to right, the order of information and link placement are important considerations. (See information on two screen readers in Appendix IV.)

Students with muscle control problems benefit from a variety of different tools, such as mouth sticks, hand wands, and adaptive keyboards, depending on their specific abilities. This indicates that page design requiring mouse movements can present accessibility problems.

Consider, as a basic design principle, the selection and use of color in learning materials. Between seven and ten percent of the population have some form of colorblindness.<sup>24</sup> The selection of color should take into account how someone with a color perception challenge will either perceive or not perceive the course design elements.

Multimedia instructional materials present accessibility issues. Students with a visual disability may not be able to see a graphic or video that is part of instruction. Students with a hearing disability will have problems receiving educational benefit from a podcast lacking a written transcript, and with a recording, video, or audio track lacking captions.

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<sup>20</sup> <http://www.udlcenter.org/>

<sup>21</sup> <http://www2.ed.gov/about/offices/list/ocr/504faq.html>

<sup>22</sup> <https://www.section508.gov/>

<sup>23</sup> <http://www.ada.gov/>

<sup>24</sup> <http://www.news-medical.net/health/Color-Blindness-Prevalence.aspx>, <http://www.colour-blindness.com/general/prevalence/> <http://www.color-blindness.com/2006/04/28/colorblind-population/> [http://en.wikipedia.org/wiki/Color\\_blindness](http://en.wikipedia.org/wiki/Color_blindness).

The second recommendation to course designers is to use graphics and multimedia only when it supports the learning. Graphical eye-candy—the use of a graphic just to add visual interest to the page—is an unnecessary distraction for people with a range of disabilities and should be avoided. Every graphic in any web-accessible page must have a descriptive Alt Tag.

An Alt Tag is an attribute used in HTML/XHTML to provide a descriptive text tag (Alt Text) that is spoken by a screen reader so a person listening can interact with the element.

A good practice in instructional design, and a recommendation of UDL, is to always include multiple representations of materials, meaning that the designer should include a text transcript for audio materials, captioning for video materials, and descriptive tags for all graphics presented in a web browser. All those help to ensure the course will meet legal accessibility requirements. Of course, auditory and visual disabilities are not the only disabilities that need to be considered.

While it may seem impossible to design a course that addresses every possible disability that might be presented by a student, it is clear from recent OCR findings that all of the items referenced thus far must be included in the instructional design. Addressing these federal requirements is clearly consistent with the INACOL standards. (For more information on this, see the section Office for Civil Rights Findings.)

## Course Instructor's Role

### Course Instructor

If the course designer has done their job correctly, the online teacher's responsibilities are far easier. It is important the teacher provide support and accommodations for students with disabilities in compliance with the student's Individual Education Plan (IEP). Depending on the program design, students may be enrolled full-time in an online school, or they may be enrolled at a brick-and-mortar school while taking supplemental online courses through an external provider or using digital content in a blended learning program. State regulations may specify which entity has responsibility for meeting the needs of a student with an IEP. Knowing which is the case and having a policy about services to special needs students will help make clear who has the responsibility for providing the support for students. This is especially important when a student needs an accommodation that is not normally included in the program.

Online teachers need to ask: has the course designer met their responsibility in designing an accessible course? If not, then there is a set of options to ensure the course becomes accessible.

### Program Administrator/Manager

If the course comes from a third party, the district may be best served by changing providers. The responsibility for compliance is the responsibility of the district. Furthermore, asking the provider to assure that their materials are accessible does not absolve the district of its legal responsibility.

OCR has cited districts that were using content provided by a number of different providers. It is critical for districts to require assurances from third party providers that they will meet the district's accessibility standards. Districts should be sure to put in place a process in their contract with the provider to review and approve any materials. Under current law, it is not the vendor who gets cited; any materials found to have accessibility problems will become a non-compliance issue for the district.

Even in situations where state agencies are reviewing course materials for compliance, the school district is still responsible for compliance. If a course approved by the state agency is found by OCR to be non-compliant, the school

district, not the state agency, will be the one cited. It has been the case that agencies did not fully understand the full and complete interpretation of accessibility, and initially approved courses for delivery, later discovering their error. Working with the providers to make existing courses accessible is more difficult than making them accessible initially.

If changing providers is not an option, the program must take responsibility to make the course accessible. The assignment may fall to the instructor. The legal responsibility for accessibility to digital content always falls on the district.

## Administrator's Role

### Program Administrator/Manager

The adoption of quality program standards is normally the purview of the program administrator and the building administrator. Many states have policies or regulations specifically addressing student funding and responsibilities as they pertain to online education. Those regulations may specify how responsibilities for student support, in the area of meeting the requirements of an IEP, are assigned. Federal legislation is about ensuring students are provided with the necessary services, not lost "through the cracks" while administrators negotiate the responsibility for meeting the student's needs.

An Accessibility Policy can help address issues of student support. It will help all concerned if the policy is created and disseminated before any accessibility problems arise. In any situation where the student's teacher is expected to make accommodation as specified in the student's IEP, it is essential the teacher be notified in advance.

What may not be as obvious, especially in situations where the student is not in a full-time online program, is that the people developing the IEP may not be familiar with online education or the specific pedagogy of the program. Therefore, someone representing the online or blended program should be part of the IEP development for every blended or online student with a disability. An Accessibility Policy for the online program helps define these issues.

A full-time online school program would be responsible for their students' IEPs and should fully understand the online program, as well as how to accommodate their students. Of course, an online school that denies students with disabilities access would be cited for non-compliance; also, a program that does not have a policy requiring access for students with disabilities, but which does not have any students with disabilities, would most likely be cited for non-compliance, as well. (For more on this, see the section on Monitoring.)

It will also benefit the program and the students to develop an Accessibility Policy, one that clearly identifies what the program/institution expects when it comes to accessibility. Under Section 504, institutions are required to designate a Section 504 Coordinator, create and make public a 504 Grievance Policy and Procedure, and annually notify the community of such. There only needs to be one coordinator designated for each institution.

In one compliance review, OCR found that a 504 Coordinator had received no training, and so, OCR required professional development for them as part of the remediation plan. Any 504 Coordinator should be knowledgeable about their role, and receive adequate training.

It is important to note that the institutions' and schools' websites must also be accessible. That includes any and all websites used to communicate, provide resources, or provide instruction. Under the ADA, educational institutions are identified as public institutions and therefore need to be accessible. That means meeting Section 508, and applying WCAG 2 (AA) standards to the website. (Website test sites are listed in the Resources Section.)

Even resources and information that are linked off the institutional websites should be accessible. One OCR compliance review identified, as an issue, over one thousand links a teacher had made to non-accessible materials outside the course. If the links are important and relevant, they must be accessible. If they are not accessible, they must not be linked to.

## Equity Issues

Public education is open to all, so any time there is a policy or practice that restricts admission to educational opportunity of a particular group of students, that policy is automatically suspect and usually illegal. Denying a group of students or even an individual student access to online courses or programs needs to be done very carefully. It is almost always impossible to justify a situation where a program or course offered through the public school system is unavailable because of a student's race, ethnicity, socioeconomic status, gender, or because the student is identified as having special needs or a disability.

Programs today would not consider blatantly saying their educational opportunities were not available to a student because of their race. Would they deny access to a course or program because of a student's gender? Would they automatically prevent English Language Learner (ELL) students from enrolling in online courses? Would they make a policy that students with disabilities could not enroll in online courses? Would they say that a student was unable to enroll in an online course because they received a free or reduced-fee lunch?

Of course, they should answer "no" to each of those questions. But programs may unintentionally deny a student access. Be sure there is not policy language, practice, or attitude that would change the response from "no" to a sheepish "yes." One way to discern if certain students are prevented access to educational programs is through a disaggregated analysis of enrollment data. In order to analyze data, your program must first be collecting enrollment data. If you are not yet collecting enrollment data, you need to start.

Data will be collected annually from every U.S. public school through the OCR Civil Rights Data Collection (CRDC) and other sources such as the state or district. Online programs need to look at enrollment data by program and course, disaggregated by subgroup. (See the section on Monitoring for more information on this issue).

If students are required to provide their own computer and internet connection to participate in an online course, you are potentially denying them equal access to that program if there are no provisions in place to assist students who cannot provide their own device and connection. If your staff, counselors, or teachers advise students away from online opportunities because they feel the student has poor English skills or has a disability, you have a problem. This also manifests itself when racial and ethnic minority students are not advised of particular opportunities.

It is important that all school employees have a good understanding of the online programs, and also understand their responsibilities related to student advice and guidance. There is ample research on how unintentional biases and stereotypes exist, and how they can color recommendations about students' potential for success and about course selection. And, if there is a feeling on the part of certain staff that blended or online education is not right for a particular group of students, and they make recommendations that result in a disproportion of students based on race, ethnicity, socio-economics, gender, or disability, there is potential for problems.

Another practice guaranteed to attract attention is when there is a test that serves as the gate for students to enroll in an online course/program. Finding a test that has been proven a valid predictor of student success in online programs is almost impossible. There are so many variations in online instruction that test instruments not directly related to a particular approach would generally be found invalid. Any test used as a gatekeeper will raise flags about student access to that program with any monitoring agency. Rather than an entry test, a short orientation to the online learning situation is recommended. This can be done as either a separate short course or during the first week of an online course. The model used should be one that is most appropriate to the situation.

The orientation provides the student with an opportunity to become comfortable with the online learning environment and pedagogy. It also helps the student assess their willingness to work within the online environment, and it provides them the opportunity to decide if they want to continue without adversely impacting their transcript. The orientation concept has been used successfully by programs since the start of the virtual school movement.

In traditional learning environments, enrollments do not always reflect the population that the course draws students from. There is an expectation on the part of civil rights monitoring agencies that individual programs should generally reflect the distribution of students in the overall population. When enrollment in courses or programs isn't representative of their base population, that raises a concern. If the disproportionality involves a protected group—race, ethnicity, ELL, gender, disability, special needs, or socioeconomic status—that can result in various complaints or civil rights enforcement agencies investigating the situation.

A school district was recently cited for civil rights violations when it was found that black and Hispanic students were underrepresented in advanced and AP courses compared to their enrollment in the school. The district was cited, not because they had specific policies that denied the students access, but because OCR specifically noted that a “policy or practice that is neutral on its face and administered neutrally, but results in a disproportionate and unjustified impact on students of a particular race or national origin ... can result in unlawful discrimination” (OCR Case No. 01-11-5003).

Civil rights advocacy groups have become more active in defending the rights of the populations they care about. Parents will sometimes approach an advocacy group for help dealing with a potential issue of discrimination before going to a state or federal civil rights agency. When that happens, the program may find itself facing a lawsuit rather than an investigation. While OCR normally takes administrative action, DOJ is more aggressive in taking issues into court. Also, there is the private right of enforcement, where an individual can sue an institution for violation of civil rights.

## Monitoring

The U.S. Department of Education's Office for Civil Rights (OCR) asks all schools to biannually report data on various topics, including disaggregated enrollment by subgroup for the Civil Rights Data Collection (CRDC). The CRDC collects information on overall and specific program and course enrollment (in addition to many other questions) by race, sex, ethnicity, and ELL. Beginning in the 2013-14 school year, the CRDC will require all public school districts to report whether they have any students enrolled in distance learning programs. In addition, school districts may voluntarily report for 2013-14 the number of students enrolled in distance learning programs by race, ethnicity, sex, ELL, and disability; but in the 2015-16 school year, all school districts will be required to report such information to OCR in the CRDC.

A group of INACOL members with civil rights experience were interested in determining if there were equity and access issues in the existing online programs. They therefore wanted to collect student enrollment data, and so, for the last five years, asked programs to voluntarily submit disaggregated enrollment data. The response rate was low, not large enough to characterize the student demographics for online education nationally. One finding, significant in light of OCR's proposed data collection, was that many programs stated they do not collect the data and have no way of knowing the student demographics.

Programs do need to begin finding ways to accurately collect student enrollment data. As described earlier, OCR will be asking for this data in the CRDC. Initially, they will be asking for general enrollment data, but we anticipate the requests will ask for more program-specific data over time. Online programs should start collecting and examining their own data now to help understand enrollment patterns and access potential program issues.

Do not be surprised when you are asked to provide student enrollment data for all distance learning programs by OCR. There are also states that are beginning to examine online enrollment data, as well. Expect, over time, those data requests to become more specific.

To be prepared, ask yourself these five questions. If you can answer yes to all five, you are in a good position with your data collection. If not, it is time to make some changes to the data you collect.

1. Can your existing data on student enrollment in K–12 online courses report enrollment disaggregated by race and ethnicity (e.g., Caucasian, African American, Hispanic, Native American, Pacific Islander, Asian, or other)?
2. Can your existing data on student enrollment in K–12 online courses report enrollment disaggregated by poverty (e.g., qualification for free or reduced price lunch under current U.S. Department of Agriculture National School Lunch Program guidelines)?
3. Can your existing data on student enrollment in K–12 online courses report enrollment disaggregated by disability (e.g., students having a diagnosed disability, thereby qualifying the student for an IEP and educational services sponsored under the Americans with Disabilities Act)?
4. Can your existing data on student enrollment in K–12 online courses report enrollment disaggregated by “Limited English Proficiency” (e.g., students diagnosed as English Language Learners under current Department of Education guidelines for The Bilingual Education Act 1968 – 2002 or New Title III)?
5. If data describing the sub-populations outlined in items 1-4 are available, based on students currently enrolled in online courses within your program, do the data closely match the percentages for each subgroup within your sending population’s enrollments and student census?

## Office for Civil Rights Findings

The Office for Civil Rights (OCR) is responsible for the monitoring and enforcement of federal civil rights legislation in educational institutions. They have two main functions: they will investigate complaints filed against institutions, and they also conduct compliance monitoring investigations on selected institutions. (The Appendix contains links to guidance documents issued by OCR that provide detailed information about issues of access.)

OCR’s recent findings of noncompliance against school districts and higher education institutions, coupled with DOJ cases and complaints filed by advocacy groups like the National Federation for Blind, have served to better define accessibility in digital settings. It is important to note that what was tolerated as common practice before may not be acceptable based on current precedent.

The most significant change in our understanding of how to make digital materials accessible is the operational definition of accessible that OCR has repeatedly stated in its compliance reports:

*“Those with a disability are able to acquire the same information and engage in the same interactions—and within the same time frame—as those without disabilities.”<sup>25</sup>*

It is important to recognize that the legislation OCR is enforcing is not new. The civil rights legislation being enforced was in place before the first online school was created in the United States. Ignorance of these laws is not an excuse for noncompliance.

Trying to make existing digital materials and courses accessible is much harder than designing materials from the ground up to be accessible. Some organizations are choosing to wait until they have received a complaint to make materials accessible. That is the wrong approach.

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<sup>25</sup> OCR Compliance Review 11-11-2128, 06121583, paraphrased from 11-13-5001, 10122118, 11-11-6002

Any online learning program's policy should be that, from this date forward, all digital materials created will be accessible. Create a plan to deal with existing materials that are not accessible. Some materials can be made accessible more easily than others. Those that are most difficult to retrofit into accessibility might be scheduled for replacement. Failure to comply with accessibility laws will not only deny students their right to educational opportunities, but it will also leave a district vulnerable to OCR investigation. As awareness of accessibility requirements increases, so does the likelihood that someone frustrated by a lack of accessibility will file a complaint.

OCR investigations normally include examination of policies; interviews with a range of parties, including school staff, students, and parents; review of enrollment data; and examination of the technological tools and materials used to provide instruction.

OCR compliance reports provide information and guidance for online education policy and practice. Should a district be found out of compliance, OCR requires a resolution agreement which would include a timeline, generally with an aggressive schedule and reporting requirements. The following is a summary of the issues identified in a series of recent OCR compliance reports.

### **24/7 Access**

The way OCR defines access is significant: engage *in the same interactions—and within the same time frame*. Schools have frequently provided an aide to support a student while they are in particular classes. But online education may allow students 24/7 access to the course and materials. Simply providing an aide to a student with a disability for a few hours does not provide them with the same access as their non-disabled peers.

### **Select and use color carefully**

Between seven and ten percent of the population has some form of color blindness.<sup>26</sup> Ideally, the user should be able to adjust colors, but if that is not possible, then selection and use of color must take into consideration the needs of students with color blindness.

### **Tag graphics**

All graphics need to have useful Alt Tags defined to support students accessing a course with a screen reader. You can test this by downloading your own screen reader. (See Appendix IV for more information.)

### **Do not make PDFs graphics**

PDF files can be made as graphics (which screen readers cannot read) or as searchable text. Only create PDFs that can be read by a screen reader.

### **Transcript audio materials**

Students with auditory disabilities need transcripts for audio materials.

### **Caption all video**

Every video must include synchronized captioning.

### **External links (outside the LMS) must be accessible**

If there are links to materials outside the LMS, it is incumbent on the teacher/course designer and, of course, ultimately the district, to ensure those materials are accessible.

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<sup>26</sup> <http://www.aoa.org/patients-and-public/eye-and-vision-problems/glossary-of-eye-and-vision-conditions/color-deficiency?ss=0>

### ***Content must be accessible to students who can only use the keyboard***

There are students with disabilities that prevent them from using a mouse. The platform (LMS) and course design must allow full access to the materials for a student without the use of a mouse.

### ***It is not sufficient to wait until you have a student with a disability to make the content accessible***

It was assumed by many that courses only had to be made accessible when a student with a disability was present. That is not the case. All courses must be accessible, addressing all the issues identified above.

## **Additional Issues**

It is important to recognize that both mobile delivery of instruction and live video used for instruction fall under the same laws, and even though OCR has not made a finding on these issues yet, instruction in both need to be made accessible. These currently present some interesting technical challenges.

Live video broadcasts should be accessible. In a traditional distance learning setting where students are in classrooms dispersed geographically from the instructor, there are a variety of ways to make the instruction accessible. When live video is broadcast to a group at a distant room, then providing support in the room is basically the same as providing support in the classroom—which it essentially is.

In video instruction settings where all the students are dispersed, live captioning is an option. It might also be possible to have a signer in a window, but of course not everyone with a hearing disability can sign. Also, the platform for live video would need to be usable without a mouse, and the display would need to work with a screen reader—all interesting challenges which hopefully will be fully addressed by the video platform providers.

More learning management systems (LMS), the applications used to deliver online courses, are offering a mobile application, or automatically determining what browser is accessing the pages, and modifying the material for that platform. The question, yet to be answered, is just how accessible those mobile learning settings will be.

## Summary

This checklist identifies the issues and actions -- identified throughout this publication -- to help ensure that online learning opportunities meet the legal requirements for accessibility, as well as meet the iNACOL accessibility standards. This checklist serves as a reminder of the issues identified throughout this publication.

### Policies

- ✓ All of the institution's courses (including those from external providers) are reviewed to ensure they meet legal accessibility standards.
- ✓ Institution has created and promulgated an Accessibility Online Learning Policy.
- ✓ Institution has designated a 504 Coordinator, a Grievance Policy, and annual notifications.
- ✓ Institution has policies and activities to ensure organizational website meets accessibility requirements.
- ✓ Institution has no gateway exam/test where a specific score is required to participate in online learning activities.
- ✓ Institution has determined process, responsibility, and timeline for retrofitting accessibility or replacing courses that are not accessible.
- ✓ Institution has adopted, as policy, a set of quality standards to which all courses adhere.

### Course Design

- ✓ Color selection does not impede students with color blindness.
- ✓ There is no use of graphical eye-candy.
- ✓ All content put into PDFs is searchable. (If it is a graphic, follow requirements for graphics.)
- ✓ All graphics have meaningful, learning-related Alt Tags.
- ✓ All audio is accompanied by text transcripts.
- ✓ All video includes synchronized captioning.
- ✓ Course navigation is possible without the use of a mouse.
- ✓ Content at all external links meets the same accessibility standards.
- ✓ Courses are reviewed with access of a screen reader in mind.

### Program and Course Monitoring

- ✓ Disaggregated enrollment data are collected for all online programs and courses.
- ✓ Enrollment data are analyzed for comparison with sending population.
- ✓ Courses are reviewed with access of a screen reader in mind.

# Appendix I: Federal and State Legal Requirements for Equal Educational Opportunity and Access

## Public Law 94-142

Information on Public Law 94-142 now called IDEA

<http://www.scn.org/~bk269/94-142.html>

Public Law 94-142 guarantees a free, appropriate public education to each child with a disability in every state and locality across the country.

The four purposes of the law articulate a compelling national mission to improve access to education for children with disabilities. (See side bar: Four Purposes of PL 94-142.) Changes implicit in the law include efforts to improve how children with disabilities are identified and educated, to evaluate the success of these efforts, and to provide due process protections for children and families. In addition, the law authorizes financial incentives to enable states and localities to comply with Public Law 94-142.

Four Purposes of PL 94-142:

- “To assure that all children with disabilities have available to them ... a free appropriate public education which emphasizes special education and related services designed to meet their unique needs.”
- “To assure that the rights of children with disabilities and their parents ... are protected.”
- “To assist states and localities to provide for the education of all children with disabilities.”
- “To assess and assure the effectiveness of efforts to educate all children with disabilities.”

## Equal Educational Opportunity Act

<http://www.educationjustice.org/federal/eeoa.html>

The EEOA prohibits specific discriminatory conduct, including segregating students on the basis of race, color or national origin, and discrimination against faculty and staff. Furthermore, the EEOA requires school districts to take action to overcome students’ language barriers that impede equal participation in educational programs.

## Title VI, of the Civil Rights Act of 1964

<http://www.ed.gov/policy/rights/reg/ocr/edlite-34cfr100.html>

Title VI of the Civil Rights Act of 1964 protects people from discrimination based on race, color, or national origin in programs or activities that receive federal financial assistance. Agencies and institutions that receive such funds include: state and local education agencies and their sub-recipients, vocational rehabilitation agencies, numerous colleges and universities, and other institutions such as libraries and museums.

Discrimination against national origin minorities on the basis of limited English skills is also prohibited by Title VI case law (see *Lau v. Nichols*).

## Lau v. Nichols (Lau Decision)

<http://cases.laws.com/lau-v-nichols>

In 1974, the U.S. Supreme Court's decision in Lau v. Nichols guaranteed children an opportunity to a "meaningful education" regardless of their language background. The decision was based on violations of the national origin provision of Title VI of the Civil Rights Act of 1964. School districts are required to provide Limited-English-proficient (LEP) students with assistance. They can no longer be left to sink or swim, offered no help in understanding their lessons, and shunted onto dead-end tracks for slow learners. Henceforth, the schools would have to assume responsibility for ensuring that LEP students receive the same opportunities as fluent English students.

The Lau decision did not prescribe a pedagogical means to this end; "affirmative steps" might involve bilingual instruction. But the mandate was clear: language-minority students must be ensured access to the same curriculum provided to their English-speaking peers.

## Americans with Disabilities Act (ADA) as amended

<http://www.ada.gov/pubs/ada.htm>

The ADA prohibits discrimination on the basis of disability in the full and equal enjoyment of the goods, services, facilities, privileges, advantages, or accommodations of any place of public accommodation, or public services. Public and private schools are covered by this Act.

## Individuals with Disabilities Education Act 2004 (PL 108-446)

<http://idea.ed.gov/>  
<http://nichcy.org/laws/idea>

The Individuals with Disabilities Education Act (IDEA) is a law ensuring services to children with disabilities throughout the nation. IDEA governs how states and public agencies provide early intervention, special education and related services to eligible infants, toddlers, children and youth with disabilities.

## Section 504 of the Rehabilitation Act of 1973

U.S. Department of Education, Section 504 overview, guidance, and regulations

<http://www2.ed.gov/policy/rights/guid/ocr/disability.html>  
<http://www2.ed.gov/about/offices/list/ocr/publications.html#Section504>  
<http://www2.ed.gov/policy/rights/reg/ocr/edlite-34cfr104.html>

Section 504 of the Rehabilitation Act of 1973 prohibits discrimination on the basis of handicap in the admission of treatment of students, and in most employment practices. Institutions, agencies, or employers receiving federal funds are covered. Schools and education programs must be organized in such a way to allow handicapped students to participate with other students in schools, classes, or activities from which they can benefit.

## Title IX of the Education Amendments of 1972, as amended by Pub. L. 93-568,

<http://www.ed.gov/policy/rights/reg/ocr/edlite-34cfr106.html>

Title IX prohibits discrimination on the basis of sex against students and employees of educational programs and activities receiving federal funds.

## Twenty-First Century Communications and Video Accessibility Act (CVAA)

<http://www.fcc.gov/encyclopedia/twenty-first-century-communications-and-video-accessibility-act-0>

The 21<sup>st</sup> Century Communications and Video Accessibility Act was passed by Congress to update our nation's telecommunications protections for people with disabilities. The CVAA follows a string of laws, passed in the 1980s and 1990s that were designed to ensure that telephone and television services would be accessible to all Americans with disabilities. But those laws were not able to keep up with the fast-paced technological changes that our society has witnessed over the past decade. This new law contains groundbreaking protections to enable people with disabilities to access broadband, digital and mobile innovations—the emerging 21<sup>st</sup> century technologies for which the Act is named.

## Appendix II

### OCR Findings

2013 Virtual Community School of Ohio Agreement Press Release, Resolution, and Agreement

#### **Press release**

<http://www.ed.gov/news/press-releases/us-education-department-announces-first-its-kind-resolution-virtual-charter-scho>

#### **Resolution letter**

<http://www2.ed.gov/documents/press-releases/virtual-community-ohio-letter.doc>

#### **Agreement**

<http://www2.ed.gov/documents/press-releases/virtual-community-ohio-agreement.doc>

#### **2014 Press Release South Carolina Virtual Charter School Agreement**

<http://www.ed.gov/news/press-releases/us-department-education-announces-resolution-south-carolina-virtual-charter-scho>

## Relevant OCR and Department of Education Dear Colleague Letters

### **Charter Schools and Civil Rights Legislation**

<http://www2.ed.gov/about/offices/list/ocr/letters/colleague-201405-charter.pdf>

### **ADA requirements for K–12 programs**

<http://www.ed.gov/news/press-releases/departments-education-issues-ada-amendments-act-dear-colleague-letter-provide-gui>

### **Broadened definitions for ADA**

<http://www2.ed.gov/about/offices/list/ocr/letters/colleague-201109.html>

### **Electronic Book Readers**

<http://www.ed.gov/news/press-releases/departments-education-and-justice-announce-continuing-commitment-accessible-tech>

<http://www2.ed.gov/about/offices/list/ocr/letters/colleague-20100629.html>

**Questions and Answers about the Law, the Technology, and the Population Affected (June 29, 2010)**

<http://www2.ed.gov/about/offices/list/ocr/docs/504-qa-20100629.pdf>

**Dear Colleague Letter [to Colleges and Universities] on Emerging Technologies (May 26, 2011)**

<http://www2.ed.gov/about/offices/list/ocr/letters/colleague-201105-pse.html>

**Dear Colleague Letter [to School Districts] on Emerging Technologies (May 26, 2011)**

<http://www2.ed.gov/about/offices/list/ocr/letters/colleague-201105-ese.html>

**Frequently Asked Questions about the June 29, 2010, Dear Colleague Letter (May 26, 2011)**

<http://www2.ed.gov/about/offices/list/ocr/docs/dcl-ebook-faq-201105.html>

**Equal Access Regardless of Immigration Status**

<http://www2.ed.gov/about/offices/list/ocr/letters/colleague-201405.pdf>

## Appendix III: Resources

### Legal Resources

**Information on Public Law 94-142 now called IDEA**

<http://www.scn.org/~bk269/94-142.html>

**Council of Educators for Students with Disabilities, Inc. Section 504 overview**

[http://www.504idea.org/Council\\_Of\\_Educators/Welcome.html](http://www.504idea.org/Council_Of_Educators/Welcome.html)

**U.S. Department of Justice's Americans with Disabilities Act information page**

<http://www.usdoj.gov/crt/ada/adahom1.htm>

**U.S. Department of Education's Nondiscrimination on the Basis of Disability in State and Local Government Services**

<http://www.ed.gov/policy/rights/reg/ocr/edlite-28cfr35.html>

**The Federal Government's websites on section 508 and the 508 standards**

<http://www.section508.gov/>

<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12>

[https://www.section508.gov/index.cfm?fuseAction=Standards\\_Harmonization](https://www.section508.gov/index.cfm?fuseAction=Standards_Harmonization)

### Accessibility

**Alternative Text (Alt Text) – detailed tutorial with examples and recommendations**

<http://webaim.org/techniques/alttext/>

**Guidelines for describing STEM images**

[http://ncam.wgbh.org/experience\\_learn/educational\\_media/stemdx/guidelines](http://ncam.wgbh.org/experience_learn/educational_media/stemdx/guidelines)

**Definition of web accessibility and a set of resources**

[http://en.wikipedia.org/wiki/Web\\_accessibility](http://en.wikipedia.org/wiki/Web_accessibility)

***White Papers on making media and web sites accessible using Adobe products***

<http://www.adobe.com/accessibility/resources.html>

***Macromedia Accessibility Kit***

<http://www.macromedia.com/accessibility>

***How the ADA Impacts Video Accessibility***

<http://www.3playmedia.com/2013/06/13/the-americans-disability-act-ada-accessible-online-video-requirements/>

***Web accessibility and universal design information from UCLA***

<http://www.dcp.ucla.edu/resources/>

***The National Center for Accessible Media***

<http://ncam.wgbh.org/>

***“Accessible Digital Media” Guidelines from NCAM***

<http://ncam.wgbh.org/publications/adm>

***MAGpie is a tool for creating closed captions and audio (video) descriptions.***

<http://ncam.wgbh.org/webaccess/magpie/>

***Crowdsource site for captioning YouTube and Vimeo video***

<http://amara.org/en/>

***NIMAS info at CAST***

<http://nimas.cast.org>

***Microsoft Windows guidelines***

<http://www.microsoft.com/enable>

***IMS Accessibility Specs and Guidelines for Distance Learning***

<http://www.imsglobal.org/accessibility>

## Web Accessibility Resources

***An article by Jim Thatcher about what not to do to make a website more accessible***

<http://jimthatcher.com/whatnot.htm>

***Web Accessibility In Mind (WebAIM)***

<http://www.webaim.org/>

***Web Accessibility Initiative***

<http://www.w3.org/wai>

***Illinois Accessible Web Publishing Wizard for Microsoft Office***

<http://accessiblewizards.uiuc.edu/>

***Four Steps to Readily Achievable Web Accessibility***

<http://www.hisoftware.com/why-hisoftware/thought-leadership/whitepapers/Readily-Achievable-Web-Accessibility.aspx>

### **2014 Roadmap to Web Accessibility in Higher Education**

<http://info.3playmedia.com/wp-web-accessibility.html>

<http://www.access-board.gov/508.htm>

### **Creating Section 508 Compliant eLearning Solutions**

<http://elearningindustry.com/creating-section-508-compliant-elearning-solutions>

### **Universal Design for Learning**

<http://www.cast.org/>

## General Accessibility Resources

### **Java guidelines**

<http://www-3.ibm.com/able/guidelines/java/snsjavag.html>

### **PDF accessibility info**

<http://access.adobe.com/>

### **Apple accessibility info**

<http://www.apple.com/accessibility>

### **More accessible web video conferencing**

<http://www.talkingcommunities.com/>

### **SETDA Policy Brief: The Accessibility of Learning Content for All Students, Including Students with Disabilities**

[http://www.setda.org/wp-content/uploads/2014/03/SETDA\\_PolicyBrief\\_Accessibility\\_FNL.5.29.pdf](http://www.setda.org/wp-content/uploads/2014/03/SETDA_PolicyBrief_Accessibility_FNL.5.29.pdf)

## Web Accessibility Checkers

### **Free tools**

<http://CynthiaSays.com>

<http://wave.webaim.com>

<https://amp.ssbartgroup.com/express>

### **List of accessibility checkers (free and fee)**

<http://www.w3.org/WAI/ER/tools/complete>

## Appendix IV

### Screen Readers

Course designers might want to familiarize themselves with how a screen reader “sees” their content.

JAWS (<http://www.freedomscientific.com/jaws-hq.asp>) is the best-known and most widely used screen reader. It is expensive, but there is a free trial download. The demo release is fully functional, but requires a computer reboot after 40 minutes.

NVDA, or NonVisual Desktop Access (<http://www.nvaccess.org/>), is an open source product. It is free and it has a unique feature that is useful for sighted users. The NVDA website describes it this way:

*“For sighted software developers or people demoing NVDA to sighted audiences, a floating window is available that allows you to view all the text that NVDA is currently speaking.”<sup>27</sup>*

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<sup>27</sup> <http://community.nvda-project.org/documentation/userGuide.html?#toc78>

## About the Author

### **Raymond M. Rose**

Raymond Rose is co-founder/President of *Rose & Smith Associates*, dedicated to sharing principles of successful online learning and innovative use of educational technology. He helped envision/administer *The Virtual High School*, becoming an early pioneer in researching and defining online learning communities. He wrote the nation's first virtual school Special Education Policy, and is a frequently invited speaker on issues of equity in online education.

Ray works with K–12, higher education, and organizational policy-makers, helping shape national learning efforts. He writes on school redesign/restructuring, online communities, professional development, and organizational change. He's currently Chair of the *Texas Distance Learning Association's Public Policy Committee*, and a member of the *Technical Working Group for the National Center on Online Learning and Students with Disabilities*. His passion is using technology to make all students successful.



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