ALLY

Blackboard

Inclusive Learning Series

Research Insights from the Ally Community

Discoveries from the Ally Odyssey: The BbWorld20 Sessions

Overview

This document summarizes analysis and key takeaways from two Ally data sessions presented at the BbWorld 2020 "Galaxy of Learning" conference held in July 2020. The two sessions are entitled:

- **Time Traveling through the Datasphere with Blackboard Ally** [Link to full session recording]
- **Accessibility Data and Beyond** [Link to full session recording]

Data were collected from over 550 U.S. higher education institutions. Analysis was organized across the three core components of Ally:

- **Institutional Report** accessibility data includes accessibility scores and issues from over 750 million digital content items in Learning Management System (LMS) courses dating back to the 2016-2017 academic year
- **Alternative Formats** usage data includes over 12 million downloads dating back to March 2018
- **Instructor Feedback** usage data includes over one million course files improved since March 2018

Topics and Guiding Questions

Part I: Understanding Content and Accessibility Trends over Time [jump to section]
How are institutional accessibility scores and critical accessibility issues with digital course content in the LMS changing over time? How do accessibility trends vary by subject area and institution type?

Part II: Understanding Usage of the Alternative Formats [jump to section]
How does student usage of the Alternative Formats vary over time and by format type? What do usage patterns suggest about the perceived value of the formats to students?

Part III: Understanding Usage of the Instructor Feedback [jump to section]
How does usage of the Instructor Feedback vary by indicator type (accessibility score) and file type? How does engagement with the Instructor Feedback in the course context compare to engagement using the Course Accessibility Report?

Part IV: Understanding Progress and Impact on Inclusion [jump to section]
How does the rate of improvement for the institutions with the most progress on files score compare to the average for all institutions? What is the relationship between engagement with Instructor Feedback and overall progress?

Part V: Understanding the COVID Impact and Transition to Remote Instruction [jump to section]
How did the emergency transition to remote instruction impact the amount of digital content added to courses, the accessibility of content added to courses, and usage of the Alternative Formats and Instructor Feedback

Part VI: Explore more from the Inclusive Learning Research Series [jump to section]
How do accessibility scores and issues vary by state? How does Ally adoption and usage vary by state? Discover links to interactive visualizations and additional papers from the Blackboard Ally Inclusive Learning Research Series.

Part 1: Understanding Content and Accessibility Trends over Time

The types of digital content that make up a course experience can help shed light on the nature and severity of the accessibility barriers in that course. Over four years, WYSIWYG content authored in the LMS had the largest increase (19 points) as a percentage of the five major content types, while PDFs and Word Docs saw the largest decrease (6 points each).
More on content types: 00:04:16

Takeaway: WYSIWYG content tends to have less severe accessibility issues because it is a native web format so an increase in WYSIWYG content compared to PDFs and Word Docs is positive trend from an accessibility perspective. From a course design perspective, this shift may also suggest more hybrid learning experiences and use of the LMS beyond just a repository for files as well as an improved user experience for students, who can engage more content within the LM Swithout downloading as many individual files.

The average WYSIWYG score for institutions remained steady over four years, decreasing only slightly by .2 percentage points to 97.8%. The relatively high score confirms the previous takeaway that WYSIWYG content tends to be more accessible in nature. Overall average files score increased 5.4 points to 48.4%.
*More on overall accessibility scores: 00:09:41*

Takeaway: The large increase in WYSIWYG content did not result in a significant change in the accessibility of that content. Files score shows gradual improvement year to year, significant given both the year to year increase in the amount of files added to courses and that many of the institutions represented in the data set only very recently adopted Ally.

Among five critical accessibility issues, "Images Missing Description" decreased the most (11.8 points), but still have the largest percentage of files that can be affected by that issue- 82.2% of all images added to the LMS. Scanned PDFs, the most severe issue of the five, decreased 2.2 points to 15.4% of all PDFs.
*More on critical accessibility issues: 00:11:37*

Takeaway: Images missing description was the most frequently addressed issue through the Ally Instructor Feedback, which may have directly contiributed to the decrease over four years. Gradual improvement over the last three years on the remaining issues appears consistent with the rate of improvement in overall files score above.
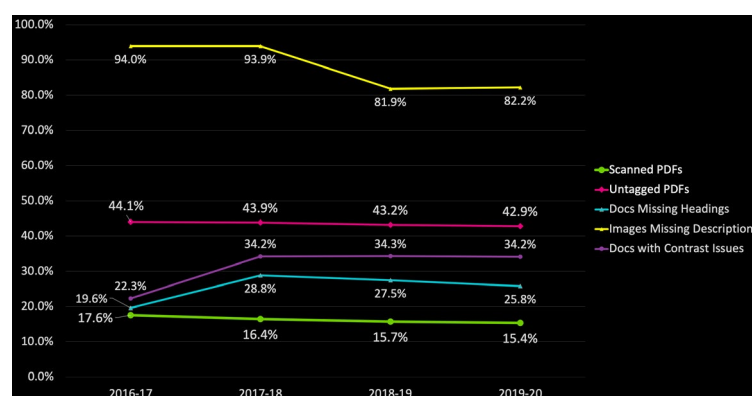
Breakdown of Major Course Content Types in Courses
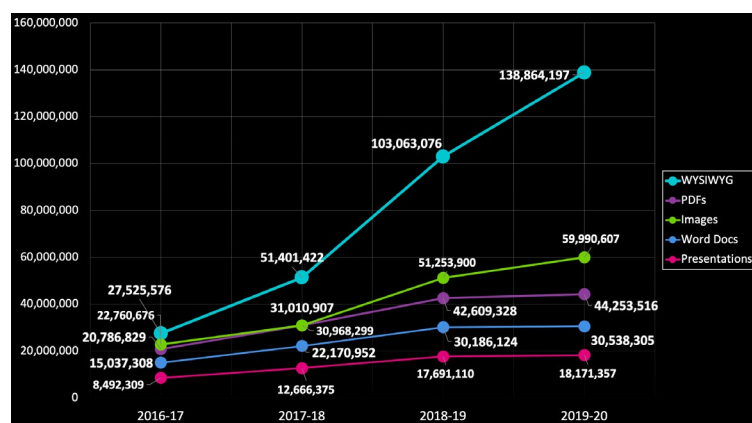
Changes in WYSIWYG and Files Accessibility Score
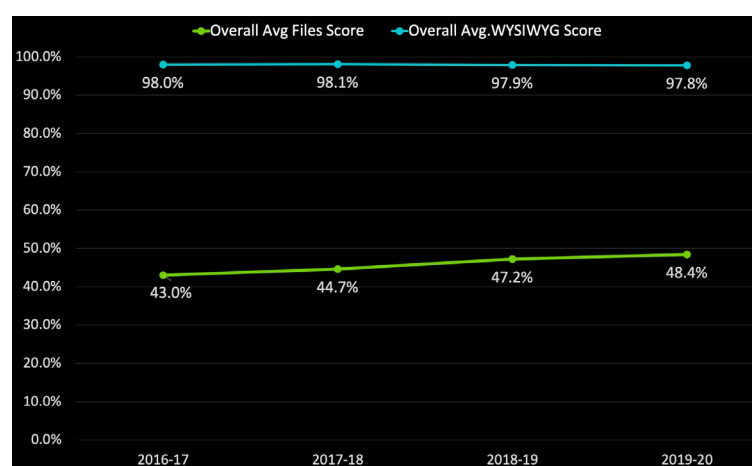
Changes in Percentage of Files with Critical Issues

Associate's Colleges had the highest average files score per institution in 2016-2017 (44.7%), and had the most four-year improvement in files score (6.8 points). Doctoral universities, on the other hand, had the lowest average accessibility score in 2016-2017 (38.2%) and the least four-year improvement (4.5 points)
More on accessibility by Carnegie Classification: 00:15:06
Takeaway: Among critical issues, Associate's Colleges had on average 28% less Untagged PDFs than Doctoral Universities and 18% less than Master's Colleges and Universities, which may be contributing to the disparity in overall files score. Master's Colleges had the smallest percentage of images missing description (76.2%).
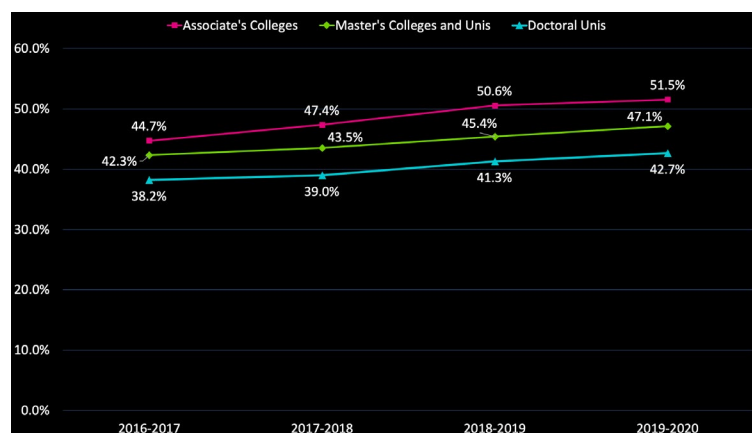
Based on Department-Level Reporting in the Institutional Report from six large doctoral universities, average overall files score was calculated across eight subject areas. Health and Business courses had the highest average course score (49.5% and 49.2%) while Engineering and Mathematics courses had the lowest (34.6% and 24.6%).
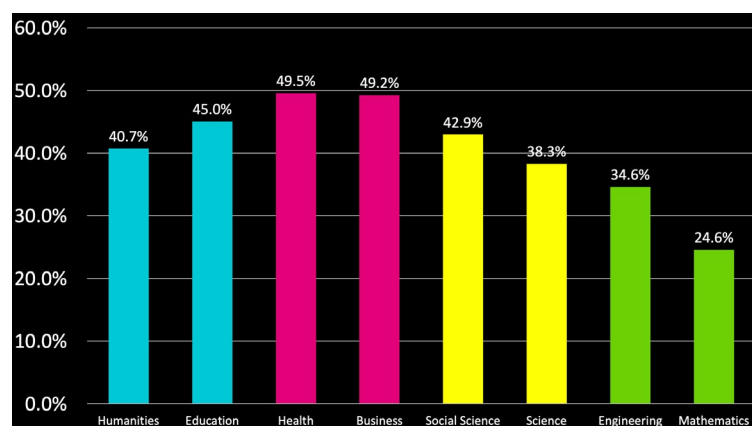*More on accessibility by subject area : 00:17:06*
Takeaway: Given the unique challenges with STEM content and complex equations, science, technology, and engineering courses had the lowest average accessibility scores. Mathematics courses had the highest percentage of Untagged PDFs (59.9%), Images missing description (95.7%), and the second highest percentage of Scanned PDFs (20.3%).
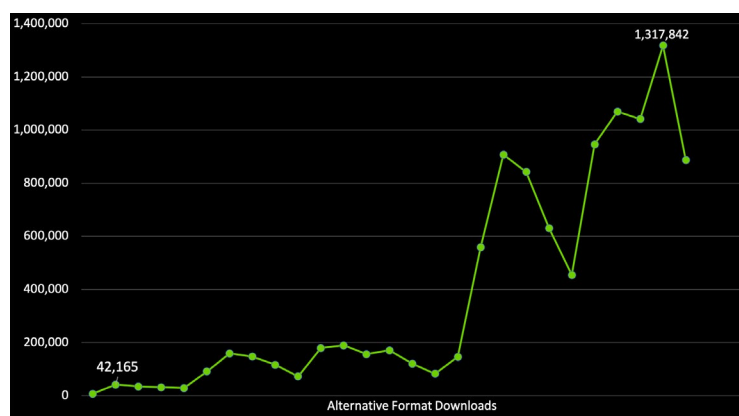
Part II: Understanding Alternative Formats Usage

Comparing April 2018 to the peak in April 2020, monthly downloads increased 3,024%. The sharp rise in monthly downloads in August and September 2019 coincide with the release of a more prominent Alternative Formats icon. Downloads per FTE increased 17% between Fall 2019 and Spring 2020, from 1.03 to 1.21 mean downloads per FTE.
More on Alt. Format downloads over time: 00:06:22
Takeaway: The steady increase in total downloads per term can be attributed to more institutions adopting Ally, awareness among students growing on campuses with Ally, and the release of the more prominent icon. Over a single term, students also displayed more purposeful engagement with the formats. In Fall 2019 and Spring 2020, the conversion rate between clicking the icon and downloading a format increased from beginning to end of term. The number of downloads per unique user also increased between from beginning to end of term, reaching a peak of 2.87 downloads per user per week at the end of the Spring Term.

Accessibility Progress by Carnegie Classification

Average Files Score by Subject Area in Spring 2020 Courses

Note: Colors of bars group disciplines by similarity

Total Alternative Format Downloads per Month

Tagged PDF and HTML Alternative Formats downloaded from Word Docs, Presentations, and PDFs accounted for 89.9% of all downloads. With just over 400,000 total downloads, OCRed PDF was the third-most downloaded format at 4% of total downloads, followed by ePUB and MP3 at 3.1% and 2.3% respectively. .5% of downloads were BeeLine Reader, which has seen a steady increase in downloads since being released in October 2019.
*More on Alt Formats downloaded by type : 00:17:32*

Takeaway: While campus interviews highlight diverse use cases of the Alternative Formats, the breakdown of formats downloaded appears consistent across institutions. Disparities in the types of formats downloaded may be the result of more specialized formats having utility for a subset of content. For example, the Tagged PDF has near-universal utility for Word and PowerPoint documents whereas the audio MP3 has less utility for adminstrative documents such as a syllabus or assignments with complex mathematical formulas. The large percentage of Tagged PDF and HTML downloads also reflect a growing demand for mobile-friendly content.

Of the three major Carnegie Classifications represented in the data set, Associate's Colleges had the highest mean downloads per FTE in Spring 2020 (1.29), 13% higher than Doctoral Universities (1.14). Associate's Colleges had the largest increase in mean downloads per FTE between Fall 2019 and Spring 2020 (.25 more) while Doctoral Universities had the smallest increase (.12 more).
*More on Alt Formats downloaded by Carnegie Class: 00:27:46*

Takeaway: The difference in mean downloads per FTE across Carnegie Classifications was not statistically significant in either the Fall or Spring term, suggesting the formats have broad appeal across different types of institutions.

Alternative Formats Downloaded by Format Type
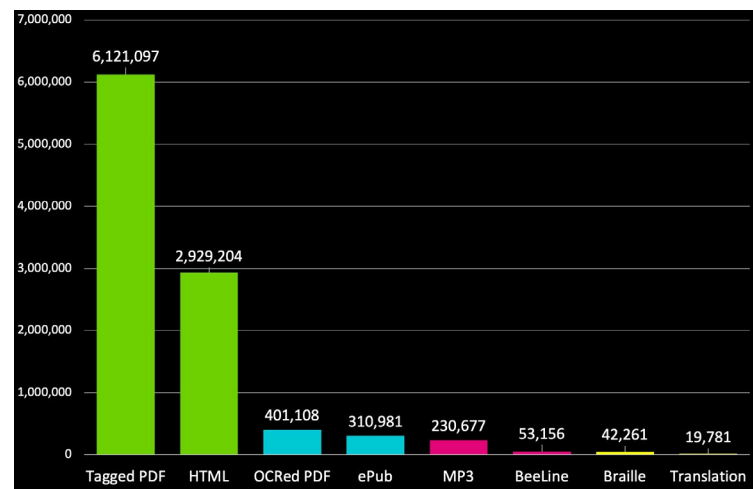
## Alternative Format Downloads by Carnegie Classification
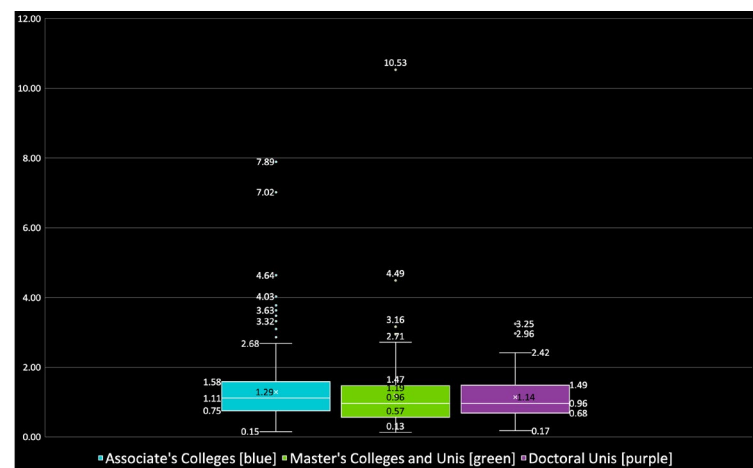
Part III: Understanding Instructor Feedback Usage

50% of all indicator clicks were "low score" red indicators, primarily of PDF and Image files. "Medium score" orange indicators were the second most engaged, nearly half of which were Word Docs.
More on indicator clicks by file type: 00:32:53

Takeaway: Given that 82% of images are likely to have a red indicator and at least 58.3% of PDFs have a red indicator, and given images and PDFs are the most common of the four file types, red indicators may be more prevalent in many courses. Instructors may also prioritize low score content when learning about and addressing accessibility issues in their courses.

Indicator Clicks by Acessibility Score and File Type
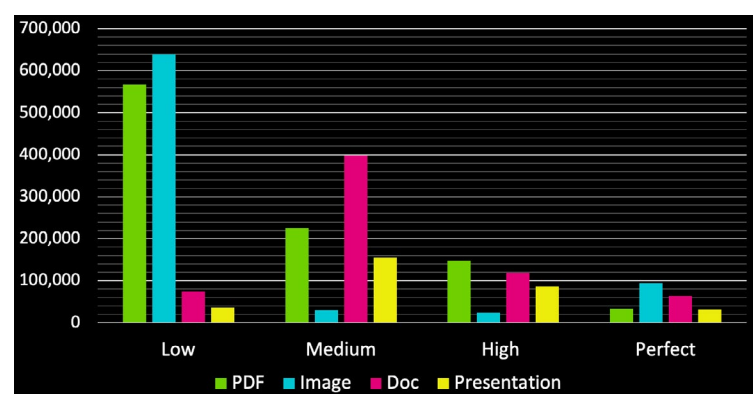
Images had the lowest average starting score, the highest conversion rate between clicking an indicator and attempting to make a fix through Ally (86.0%), and the second highest success rate of files altered that resulted in an improved accessibility score (87.4%). 64% of all files improved through Ally were images. PDFs had the second most indicator clicks but the lowest conversion rate (21.1%) and the third lowest success rate (78.0%).
More on engagement by file type: 00:34:50

Takeaway: Considering the complexity of some file accessibility issues, a success rate above 73% for all four file type provides some evidence of the effectiveness of the Instructor Feedback in guiding instructors to successfully correct accessibility issues.

The Course Accessibility Report (CAR; released in August 2019) has not been enabled by all institutions, but has seen increased usage over time. The number of files improved through the CAR reached a peak in May 2020 (66,803). In 2020, engagement with the Instructor Feedback initiated through the CAR had a higher conversion rate (74.5%) and success rate (90.7%) compared to engagement through the course context (44.0% conversion rate; 83.7% success rate).
More on the Course Accessibility Report: 00:38:46

Takeaway: A lower conversion and success rate in the course context may be the result of more exploration and initial engagement with the feedback compared to the CAR, which requires more deliberate navigation to access and offers instructors additional guidance about "easier" issues to fix. In the top 100 courses with the most files improved, 50% of files improved on average were made through the CAR, also suggesting that the CAR plays an increasingly important role in courses with the most improvement. courses making the most progress on accessibility issues.

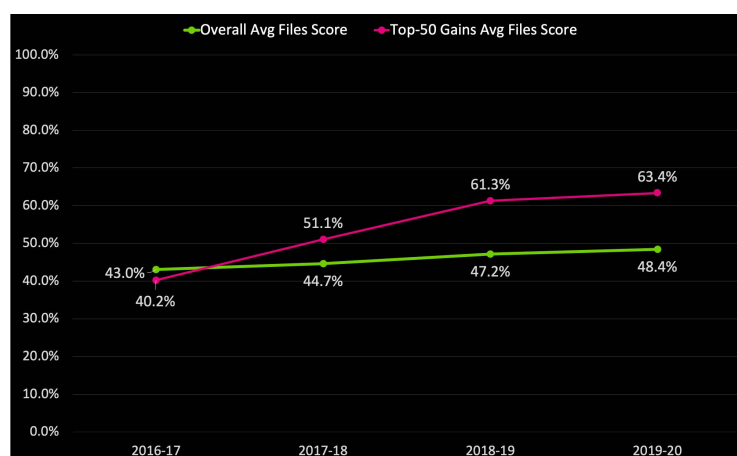## Part IV: Understanding Progress and Impact on Inclusive Education

While the average improvement in overall files score for all institutions with Ally was 5.4 percentage points over four years, the average improvement for the top 50 institutions with the largest gains was 20.4 points.
More on improvement by the top 50: 00:28:00

Takeaway: Based on interview data with campus leaders, institutions that made the most progress the most quickly on accessibility score tended to have:

- Buy-in from leadership with clearly articulated institutional goals for accessibility progress
- Focused professional development for faculty and support for faculty with more challenging accessibility issues

Instructor Feedback Engagement by File Type

Note: Engagement data only includes files altered through the Ally interface, so files altered and conversion rates may be higher if files fixed directly through the LMS were accounted for in the data.
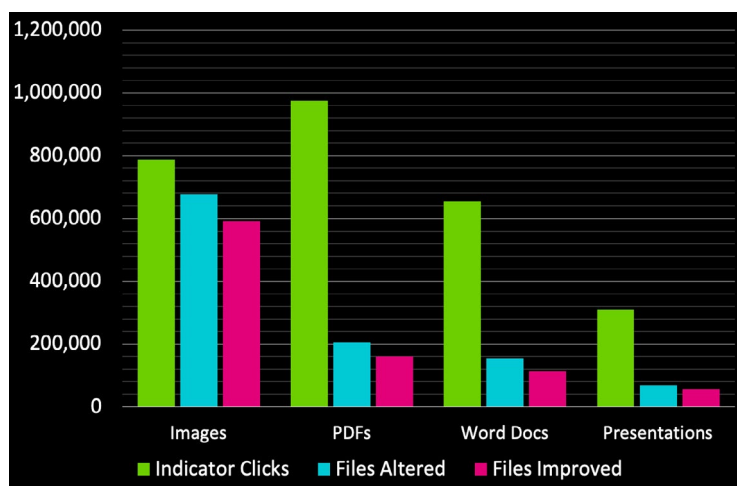
Instructor Feedback Engagement by Tool since Jan 1, 2020

Engagement Type	CAR	Course Context
Indicator Clicks	386,113	1,125,016
Files Altered **(Conversion Rate)**	287,758 **(74.5%)**	495,442 **(44.0%)**
Files Improved **(Success Rate)**	261,681 **(90.9%)**	414,767 **(83.7%)**

Avg. Files Score for Top-50 Instittutions with Most Progress

For the 420 institutions with a 2016-2017 files score and progress greater than or equal to zero over four years, there is a statistically significant relationship between the total number of indicator clicks per FTE and gains in overall files score (represented in the vertical access of the scatter plot). Correlation analysis reveals a moderate correlation of .508. *More on clicks per FTE and progress:* 00:29:11

Takeaway: Given the variety of ways that institutions have rolled-out Ally to their campuses that can impact their rate of accessibility progress as well as fluctuations in the amount of digital content year to year, it is encouraging to discover a meaningful relationship between engagement with accessibility feedback and progress on overall files score. Although there are numerous factors that influence institution-wide progress, the evidence suggests that the accessibility indicators and feedback may help facilitate that progress at scale.

Relationship between Clicks per FTE and 4-Year Progress

$$y = 2.5154x + 4.9081$$
$$R^2 = 0.2679$$

Part V: Understanding Impact of COVID-19 and the Transition to Remote Instruction

There appears a considerable uptick in the amount of digital content uploaded into courses in March 2020 when most institutions moved to emergency remote instruction compared to March 2019. More than double the amount of WYSIWYG content was created, and the four major file types increased between 41% and 67%. *More on COVID-19 impact on content :* 00:32:41
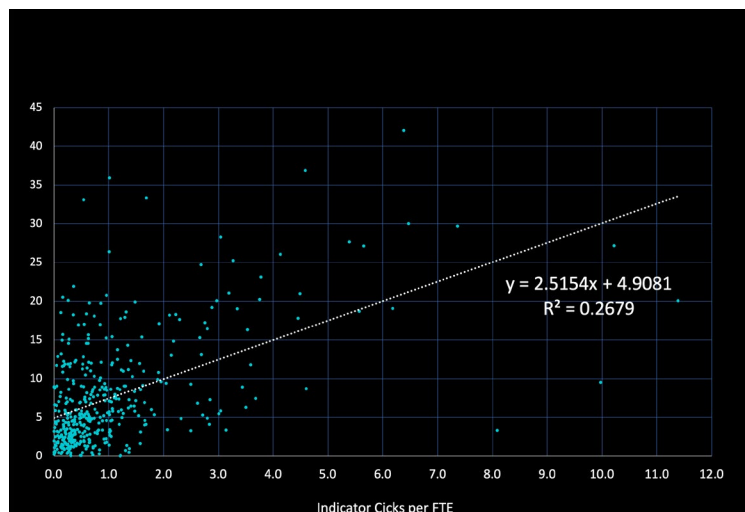
Takeaway: An unforeseen uptick in new content in courses places additional strain on disability support and access teams tasked with remediating content for students with disclosed disabilities. Without increased resources to take on the additional remediation work, students may face delays in receiving accessible materials, putting them at risk of falling behind.

The average accessibility scores of file and WYSIWYG content added to courses in March 2020 (47.1% and 97.8%) was largely consistent with March 2019 (46.8% and 97.8%). While the level of consistency in scores did not result in a larger percentage of files with accessibility issues, the increase in content led to an overall increase in content with critical accessibility issues. *More on COVID-19 impact on accessibility:* 00:33:53

Takeaway: Although the accessibility of the content did not deteriorate as a result of the transition to remote instruction, the influx of new content still resulted in an increase in critical accessibility issues, confirming the need for scalable tools and data-informed insights to address rapid changes to course delivery.
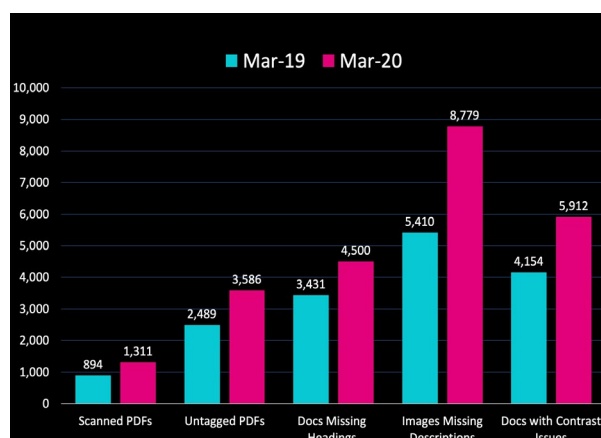
Avg. Increase in Content for March 2019-2020
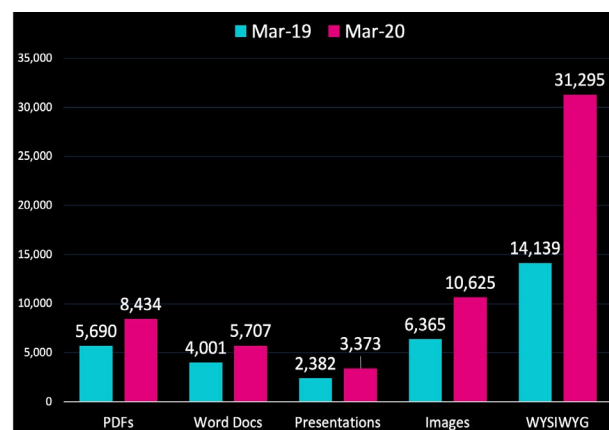
Critical Issues Comparison: March 2019 and March 2020

Prior to the transition to remote instruction, Alternative Format downloads never exceeded 300,000 in a single week. During a five week stretch in Spring 2020 when instruction resumed, students downloaded an average of over 300,000 Alternative Formats per week, and downloads per FTE in the Spring term increased by 17%. The number of files improved through the Instructor Feedback also reached record levels during two consecutive weeks in April. *More on Alt. Format downloads and COVID-19:* 00:08:49

Takeaway: An increase in the amount of digital content and an increased need for content in formats that work with available devices and software at home may have contributed to the increase in Alternative Format downloads in Spring 2020. The April increase in files improved may be related to the influx of content in March, or proactively addressing issues for Summer and Fall 2020 courses.

Alternative Format Downloads per Week: COVID-19 Impact

Explore More from the Inclusive Learning Research Series

What are the average accessibility scores and critical issues for institutions with Ally in your state? What does Ally adoption and usage look like in your state?

The hex map allows you to view overall files score, WYSIWYG score, and percentage of files with critical accessibility issues by state.
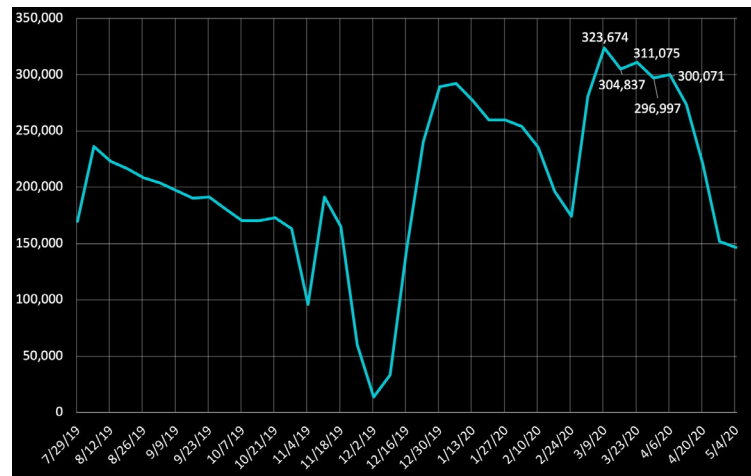
The packed bubble chart allows you to view the number of institutions with Ally, number of full time students impacted, amount of content checked, and usage of Alternative Formats and Instructor Feedback by state.

Visit **ally.ac/research** to interact with the visualizations as well as find more papers from the Inclusive Learning Research Series, including:

- **Student Usage of the Alternative Formats**
- **Instructor Engagement with Accessibility Feedback**
- **Ally Adoption and Usage at Doctoral Universities**
- **Ally Adoption and Usage at Associate's Colleges**
- **Impact from Fix your Content Day**

Comment, post questions, and discuss findings from the Research Series on the Ally User group at **usergroup.ally.ac/resources**

Accessibility Scores and Critical Issues by State: Hex Map
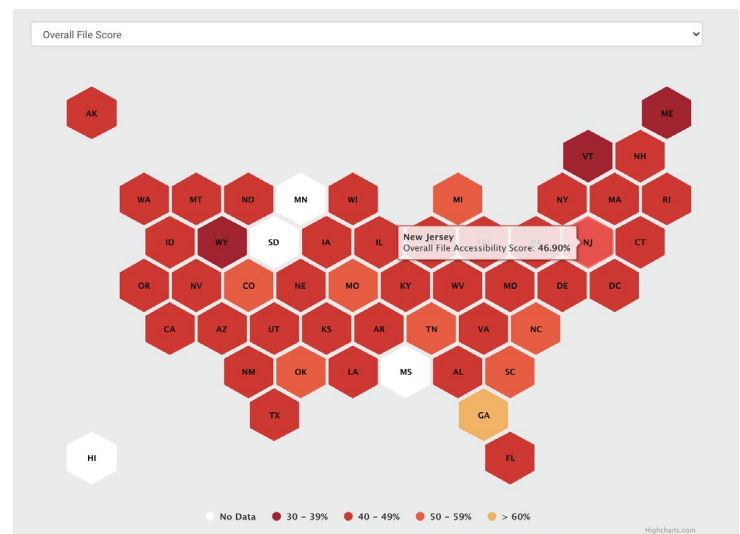
Ally Adoption and Usage by State: Packed Bubble
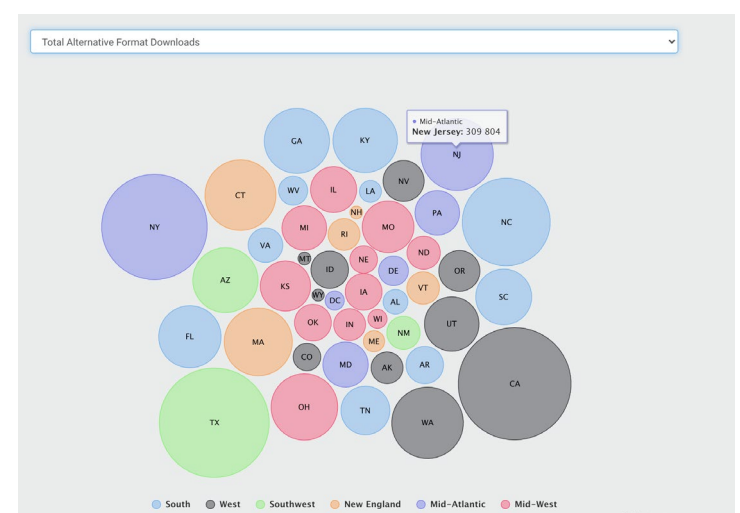
Join the global Community of educators advancing inclusive education at usergroup.ally.ac