Jul 30th, 3:00 PM - 4:00 PM

Analyzing the Implementation of Open Caption Videos in Online Developmental Math Courses and the Impact on Student Success in Community Colleges: Does captioning really make a difference in student learning?

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Analyzing the Implementation of Open Caption Videos in Online Developmental Math Courses and the Impact on Student Success in Community Colleges:

Does captioning really make a difference in student learning?

Dr. Rebecca Graetz

Distance and Adult Learning Specialist

Instructional Designer

Introduction

EdD in Higher and Post Secondary Education with emphasis on accessibility.

Dissertation topic:

"Analyzing the implementation of open captioned videos in online developmental Math courses and the impact on Success of community college students."

2014

Why a dissertation on captioning?

- Personal Interest
- Experience as a developmental Math student in 2002 taking Introduction to Algebra and Intermediate Algebra.

- Parent of two sons that have Dysgraphia. Dysgraphia is a processing disorder with large gaps between written ideas and understanding demonstrated through speech. Cognitive skills are important for learning such as audio, visual and kinesthetic.

- Both are college graduates and professionals in their field of study.

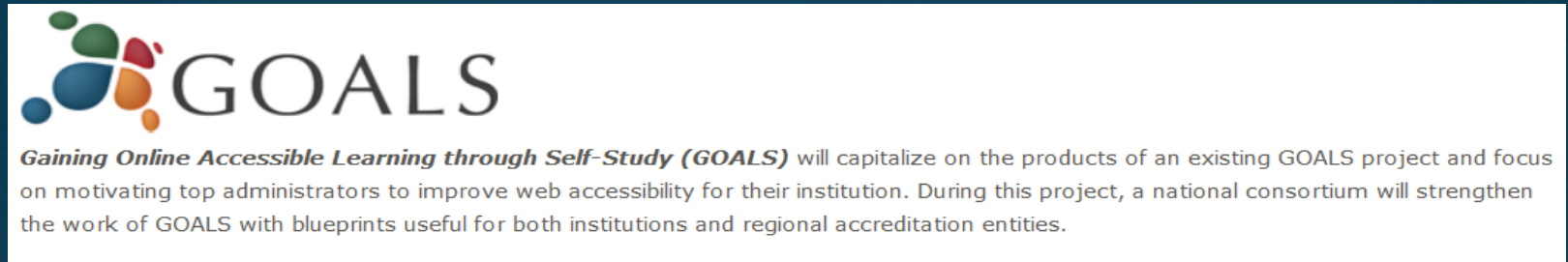Manufacturing Engineer

Area Coordinator

Overview and Background

- Research study was based on a product of an Accessibility Task Force recommendation at Inver Hills Community College.

- Open/closed captions in video of online courses are not widely researched nor is data available.

- Open captions are similar to subtitles and cannot be turned off.

- Closed captions gives the viewer to turn subtitles on or off.

Accessibility Task Force

- Campus self-assessment using GOALS Project (The National Center on Disability and Access to Education).

Gaining Online Accessible Learning through Self-Study (GOALS) will capitalize on the products of an existing GOALS project and focus on motivating top administrators to improve web accessibility for their institution. During this project, a national consortium will strengthen the work of GOALS with blueprints useful for both institutions and regional accreditation entities.

- Benchmark and planning tool.

- Three month assessment and final recommendation on web accessibility which included captioning of videos on campus website as well as videos in courses.

Requests and Contracts

- Formal request from faculty member to have videos professionally captioned. This request was because of the recommendation from the Accessibility Task Force.

- Funds were provided from a "year-end funds" approval.
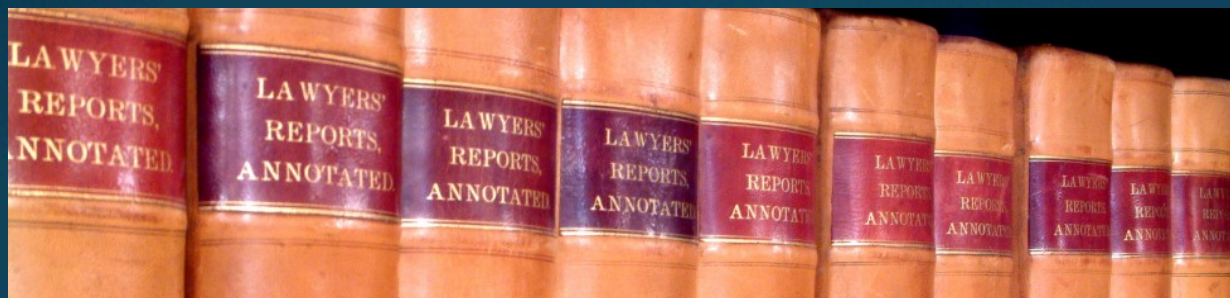
- Detailed contract written between Minnesota State Colleges and Universities (MnSCU) and Automatic Sync.

- Prepaid purchase of video transcription service.

Project

- Videos were already recorded in Camtasia and saved on a My MediaSpace server.

- Courses were Introduction to Algebra and Intermediate Algebra online with two face-to-face exams.

- Analyzed the viewing of videos before captioning (academic year 2012-2013).

- Analyzed the viewing of videos after captioning (academic year 2013-2014)

Quality Matters

- Courses captioned were Introduction to Algebra and Intermediate Algebra taught in blended format. Course is online with exception of mid-term and final exam.

- Videos were required viewing for course.

- Courses are QM Approved.

- QM Standard 8.3 states:

  "The course contains equivalent alternatives to auditory and visual content".

Process
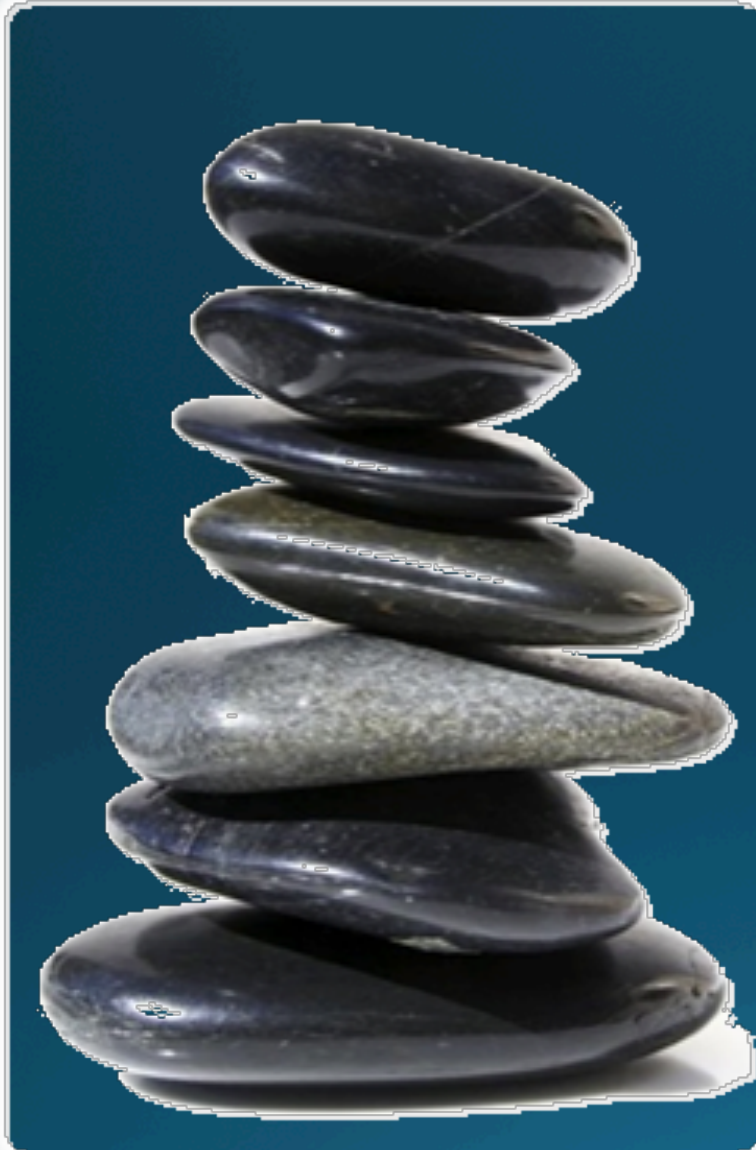
- Videos were recorded in Camtasia Relay and saved in MyMediaSpace.

- Videos were uploaded into Kaltura Management Console (KMC).

- System integration setup between KMC and Caption Sync.

- Setup Playlist and tagged videos in KMC for Caption Sync.

- Caption Sync gets videos electronically and transcribes them.

- Videos placed back into KMC by Caption Sync when finished.

- Videos placed back into D2L from KMC by instructor.

MATH 0840 and MATH 0940

Discovery

▪ The "Administrative Secret" and "Partner ID" had one extra space. Video processing was being rejected. Caption Sync Help Desk was highly involved in finding out what was incorrect and making this work.

▪ Below is a screen shot of prepaid purchase and progress of captioning. Email sent to confirm completion of captioning.

Prepaid Balance

for Inver Hills Community College since 2013-05-07

(Minutes)	Net =	Purchased	- Credited	- Used	- In Process	- Transcription Only
Captioning	246	2400	0	2034	120	
Transcription	246	2400	0	2034	120	0

Below is what is still in process:

1375135706rgraetz	7/29/2013	Parabolas_and_Circles_Lecture	27	Transcription in Progress	Captioning	URL List	
1375135632rgraetz	7/29/2013	Evaluating_Logs_and_Properties_of_Logs	39	Transcription in Progress	Captioning	URL List	
1375135531rgraetz	7/29/2013	Graphing_Exps_and_Logs_2	54	Transcription in Progress	Captioning	URL List	

Discovery

- The browsers used were an issue and instructor recommended IE over any others. The videos did not show correctly.

- Instructor re-embedded videos into D2L as HTML files so the videos open up correctly.

Course Analytics

- Export data to MS Excel from D2L and see how many and how long students viewed videos

⊟ Video Lectures		
I. Fractions Video	13	0:13:27
II. Adding and Subtracting Real Numbers Video	12	0:07:56
III. Multiplying and Dividing Real Numbers Video	11	0:11:03
IV. Order of Operations Video	12	0:28:52
v. MyMathLab Registration Instructions	9	0:02:15
MyMathLab Login	10	0:00:51

- A total of 51 videos were captioned and used in courses with 6 videos overlapping between Introduction to Algebra and Intermediate Algebra.

- Final analysis was student success defined by passing grades from before open captioned videos and after open captioned videos.

Process

- Save video for captioning on media server

- Request captioning from media server

- Videos are captioned within three days

- Captions automatically pushed back to media server

- Captioned videos then inserted in LMS courses
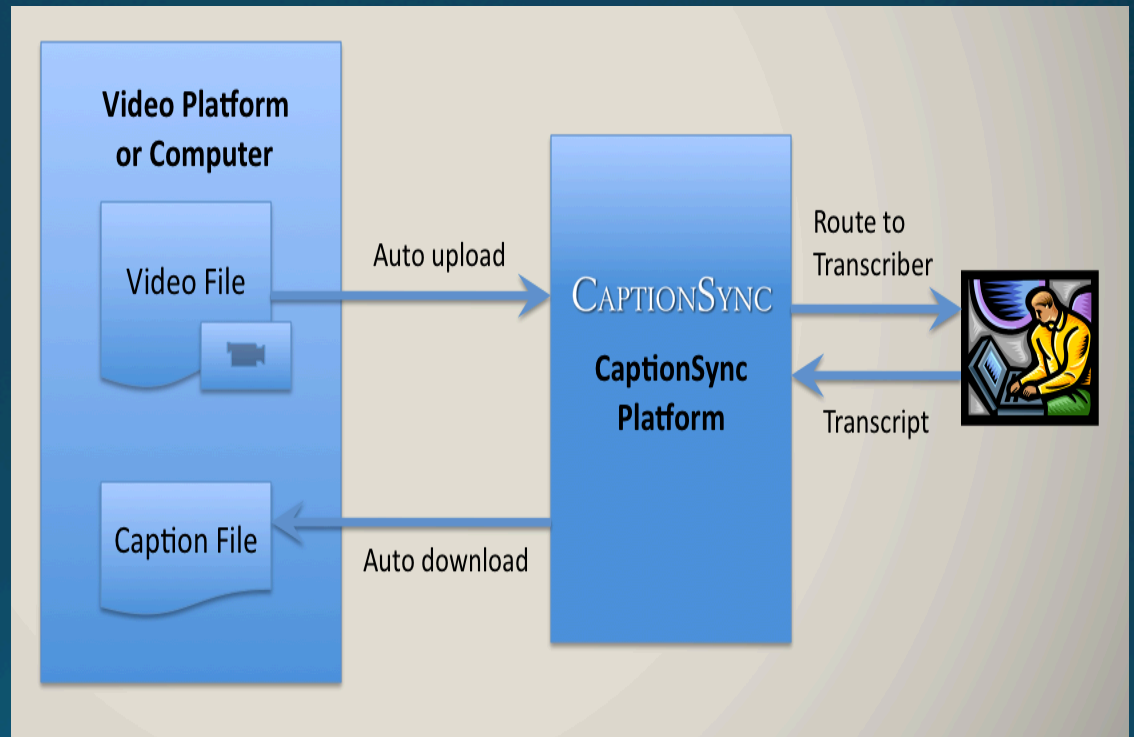
Analysis of Data Collected

- Demographics were post-traditional white females who are Pell Grant eligible.

- No difference in grades between before and after captioned videos.

- Significant difference in video clicks and time watching videos.

- The sample is size was 204 students with 132 successfully completing the course.
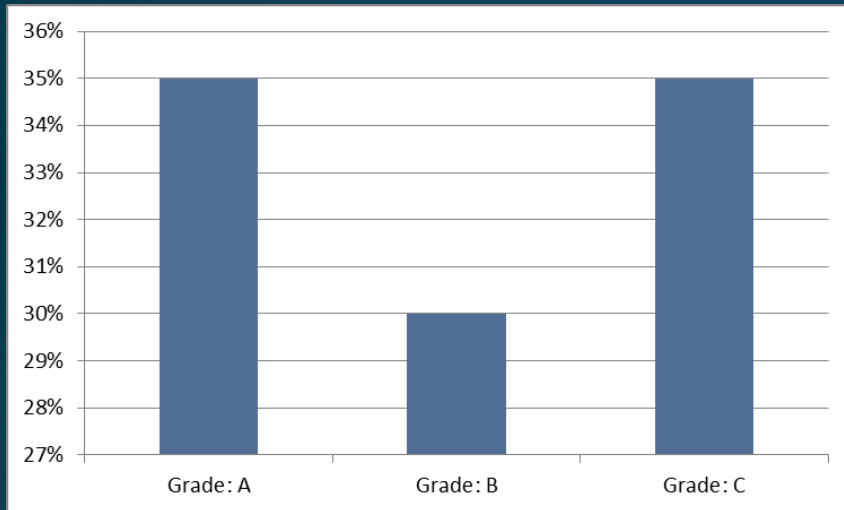
Student Population
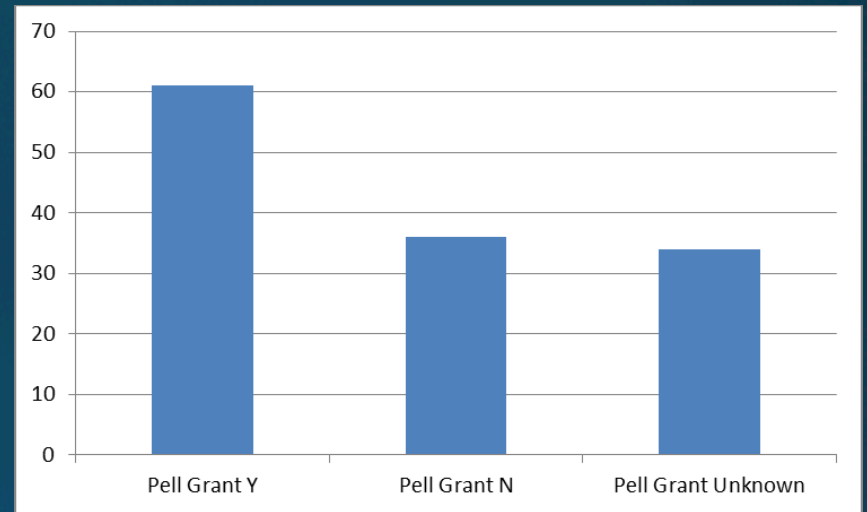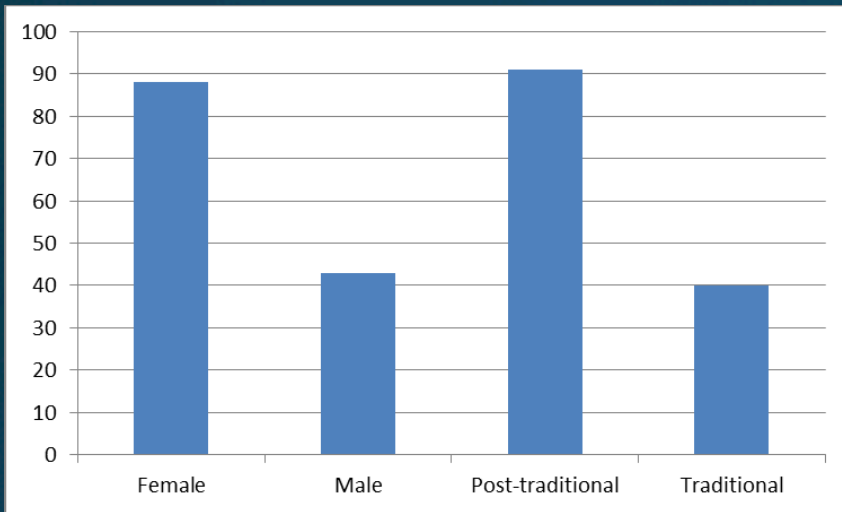
Post-traditional white female that were
Pell Grant eligible
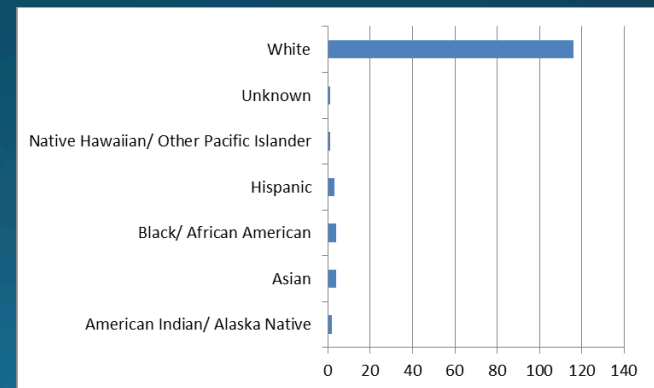
Grades in Introduction to Algebra

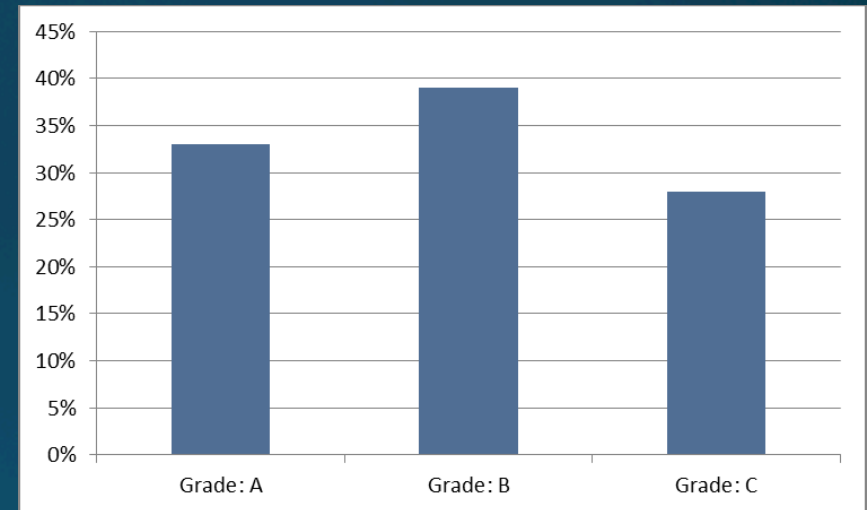Introduction to Algebra

Grade: A	35%
Grade: B	30%
Grade: C	35%

Before Captioning
Academic Year
2012-2013

Introduction to Algebra

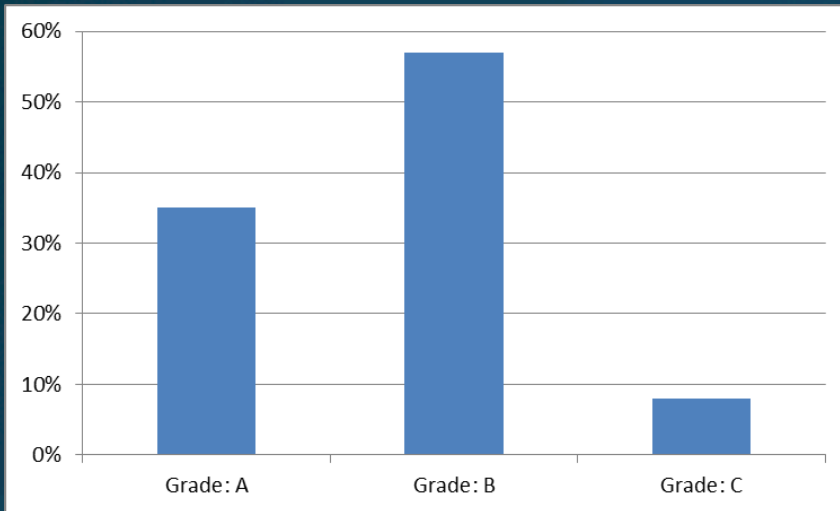| Grade: A | 33% |
| Grade: B | 39% |
| Grade: C | 28% |

After Captioning
Academic Year
2013-2014

Grades in Intermediate Algebra

Intermediate Algebra

Grade: A	35%
Grade: B	57%
Grade: C	8%

Before Captioning
Academic Year
2012-2013

Intermediate Algebra
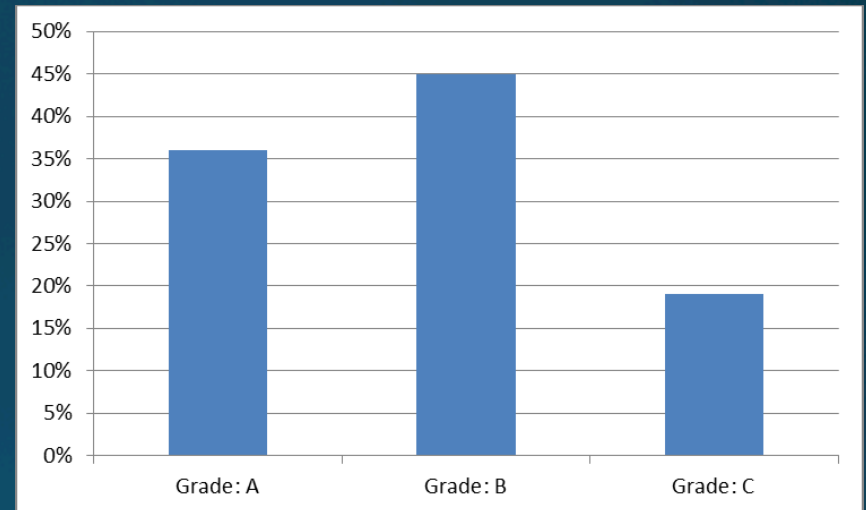
Grade: A	36%
Grade: B	45%
Grade: C	19%

After Captioning
Academic Year
2013-2014

Introduction to Algebra – Before and After Captioning

Clicks Before and After Captioning

1074

402

Time Viewing Videos Before and After Captioning: Hours, Minutes, Seconds

67:13:32

37:29:24
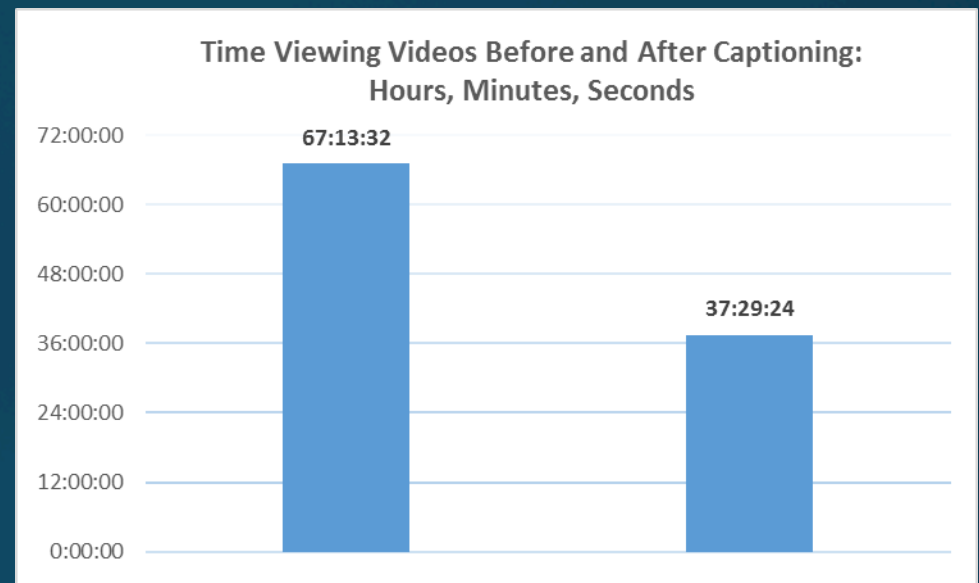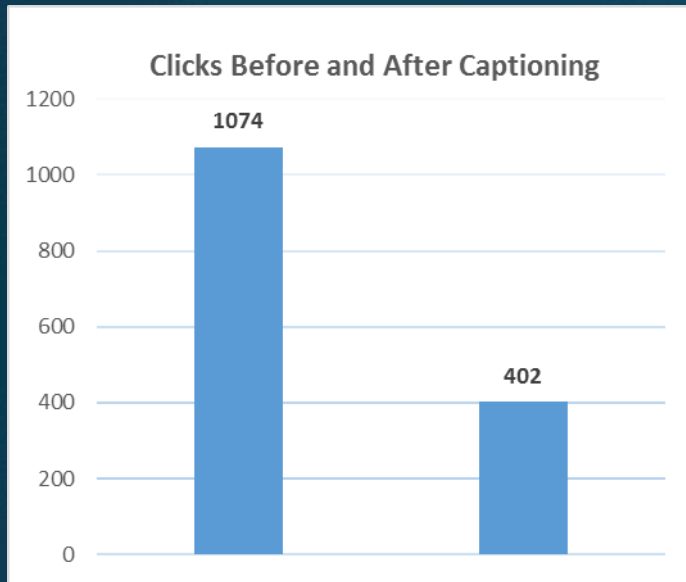
Total <u>clicks</u> before captioning : 1074

Total <u>clicks</u> after captioning was: 402

Total time <u>viewed</u> before captioning : 67 hours 13 minutes and 32 seconds.

Total time <u>viewed</u> after captioning : 37 hours 29 minutes and 24 seconds.

Reference:
Graetz, R. (2014). Accessibility and Online Videos in D2L: A case study of implementing open captioned videos in an online developmental Math course

Process for identifying videos for captioning

- Disabilities Coordinator identifies all students who have a disability that might need captioning services defines what courses and instructors will receive ADA reasonable accommodation notification.

- Disabilities Coordinator sends notification to instructors requiring that they meet with the Instructional Designer regarding captioning requirements or instructional material to meet accessibility needs. A list of ADA reasonable accommodations will be included in the notification. Instructional Designer is cc'd on email.

- Instructor meets with Instructional Designer to talk about course design and whether videos need to be captioned or any content needs to be changed for accessibility needs.

Types of Captioning Services

In-House

Camtasia Studio, iMovie, student workers paid to caption videos.

YouTube

Automatically captions videos often times incorrectly.

Professional caption services

Automatic Sync Technologies
3Play Media

Cost Comparison

In house (faculty, instructional technologists, or student workers)

- Estimated cost: $200 - $800 per hour of content, sometimes with long turnaround

- Does not include software, hardware, or training on how to caption

Professional captioning company:

- $156 per content hour for 3 day turnaround

- 100% accuracy

- Top-quality support

Advocacy Groups and Legislation:

NAD vs Netflix (September 2014)

NAD and Apple iTunes (December 2014)

NAD and VUDU (January 2015)

(streaming owned by WalMart)

NAD and MOOCs (MIT, Harvard and edX, Inc.)

National Association of the Deaf

What the legislation means for Higher Education?

- Individuals with disabilities must have an *equal opportunity* to participate in and benefit from the goods and services of a college or university (public or private).

- The opportunity to participate must be equal to other students.

- Students with disabilities must be provided aids or services to provide equal opportunity.

- Effective and Equal communication.

AUTOMATIC SYNC
TECHNOLOGIES
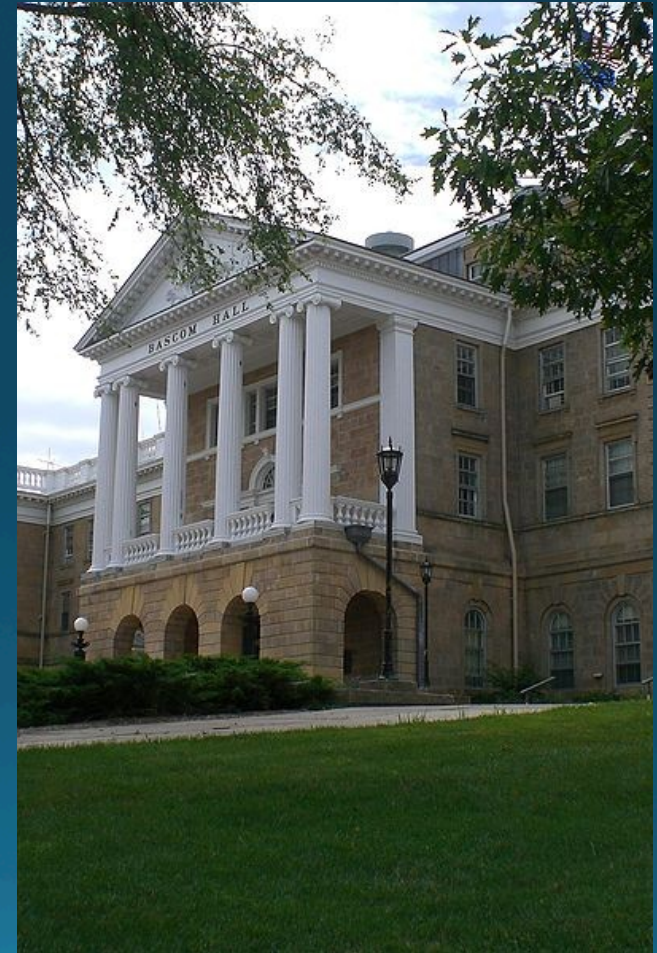
Learner Variability

- Visible disabilities; visually impaired, hearing impaired, service dog

- Invisible disabilities: pain, PTSD, diabetes, learning disabilities

- Captioning addresses all cognitive learning styles .These are visual, auditory and kinesthetic or VAK.

- According to Sarasin (1999) VAK learning styles referred to human observations channels: visual, hearing and feeling.

Ask yourself this…

- What is the population of students who need captioning for ADA compliance?

- What process is in place for requesting captioned videos?

- How are videos being used in the classroom (face-to-face as well as online)?

- Are transcripts already available for a video imported from an outside source? Transcript versus captioning.

- What is the cost? Is it more effective to do caption in house or use a professional vendor?

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