



The Center for Aviation and  
Automotive Technological Education  
Using Virtual E-Schools



# EducateWorkforce

Center for Workforce Development and Clemson Online | March 31, 2017

# Webinar Introductions



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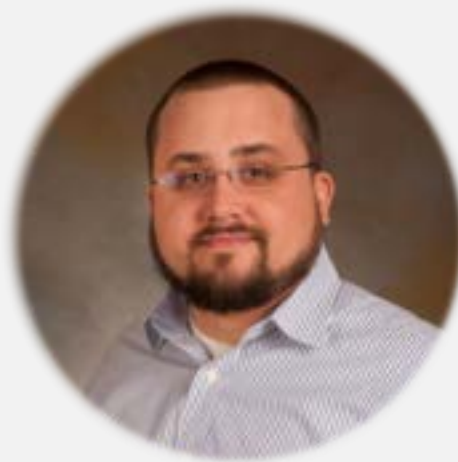
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# Agenda

This webinar will cover the following topics.

- Digital Learning
  - EducateWorkforce Defined and Course Offerings
  - Course Design Overview
  - Workflow
- Educational Technology
  - Open edX Platform
  - LMS, CMS, and Insights
  - Hosting Architecture
- Support Protocol
  - Help Form, Email for Communication, and Tracking Support Tickets
- Questions and Answers

# 4 Pillars of Workforce Development



**Digital Learning:** Providing digital tools to increase access to information using virtual reality and e-learning

[www.educateworkforce.com](http://www.educateworkforce.com)



**Career Pathways, College Affordability & Graduation Improvement:**

Developing scholarship opportunities, innovative articulation programs, and stackable certificate options for postsecondary education



**K-12 STEM Education Initiatives:**

Facilitating recruitment, professional development, student engagement, and outreach and support



**Research, Advocacy & Networking:**

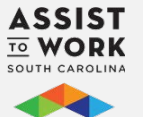
Integrating education, industry, research, organizations and the public to create awareness of workforce development challenges and resources



CUCWD: The Clemson University  
**Center for Workforce  
Development**



CA<sup>2</sup>VES: The Center for  
**Aviation & Automotive  
Technological Education**  
Using Virtual E-Schools



The background is an abstract composition featuring a series of bright, diagonal light streaks that create a sense of motion and depth. These streaks are set against a backdrop that includes a blurred image of a bridge with concrete pillars and a road, suggesting a modern, technological environment.

# Digital Learning

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Courseware Offerings and Components

# EducateWorkforce Defined

Online learning platform tailored to unique needs of 2-year institutions and industry partners, focusing on technician education for the advanced manufacturing sector.



Individual Use



Class Section



Custom Subsite



# EducateWorkforce Offerings



MANUFACTURING  
SAFETY



QUALITY IN  
MANUFACTURING



MANUFACTURING PROCESSES &  
PRODUCTION



MANUFACTURING  
MAINTENANCE



INTRODUCTION TO  
METROLOGY



BASIC  
ELECTRICITY



WORKFORCE  
FUNDAMENTALS



EXPLORING ADVANCED  
MANUFACTURING



EXPLORING  
ENGINEERING

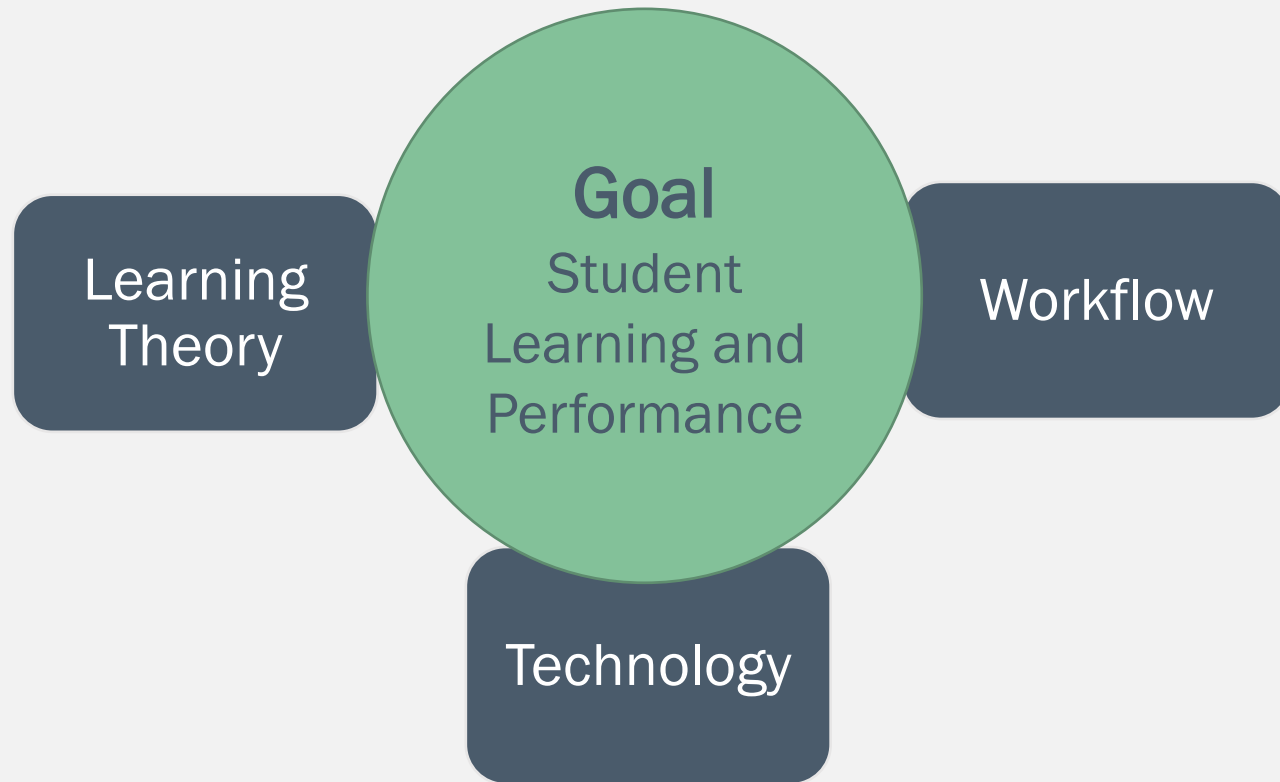


SOFT SKILLS IN  
MANUFACTURING



PATHWAY TO TECHNOLOGY  
ENTREPRENEURSHIP

# Educational Design



# Learning Theory

## CAST: Universal Design for Learning (UDL)

Principle 1

Affective Network



The **WHY** of Learning

Provide Multiple Means of  
**Engagement**  
to stimulate interest and motivation

Principle 2

Recognition Network



The **WHAT** of Learning

Provide Multiple Means of  
**Representation**  
to reach all learning styles

Principle 3

Strategic Network



The **HOW** of Learning

Provide Multiple Means of  
**Action & Expression**  
to provide options for expressing knowledge

# UDL as a foundation for EducateWorkforce Curriculum

## Principle 1

### Affective Network



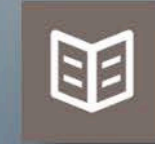
The **WHY** of Learning

Provide Multiple Means of  
**Engagement**  
to stimulate interest and motivation

- ✓ Assessments are interactive, authentic, & allow for self-evaluation
- ✓ Learning materials provide opportunities for tactile manipulation of virtual and web-based resources
- ✓ Scaffolded learning is provided in the form of Introductions, Summaries, Connecting to New Knowledge, schedules, progress tracking, etc.



**Activities & Assessments**



**ePub**



**Virtual Reality**



**Glossary**

# UDL as a foundation for EducateWorkforce Curriculum

Principle  
2

Recognition Network



The **WHAT** of Learning

Provide Multiple Means of  
**Representation**  
to reach all learning styles

- ✓ Key content presented in multiple formats
- ✓ Key terms are highlighted and defined
- ✓ Content adheres to web accessibility standards



Open Text & ePub



Video Lectures



Virtual Reality



Glossary

# UDL as a foundation for EducateWorkforce Curriculum

Principle  
3

Strategic Network



The **HOW** of Learning

Provide Multiple Means of  
**Action & Expression**  
to provide options for expressing knowledge

- ✓ Items vary in format:  
Multiple Choice, True/False,  
Drag & Drop, Open Response with  
Rubrics, Virtual Manipulatives

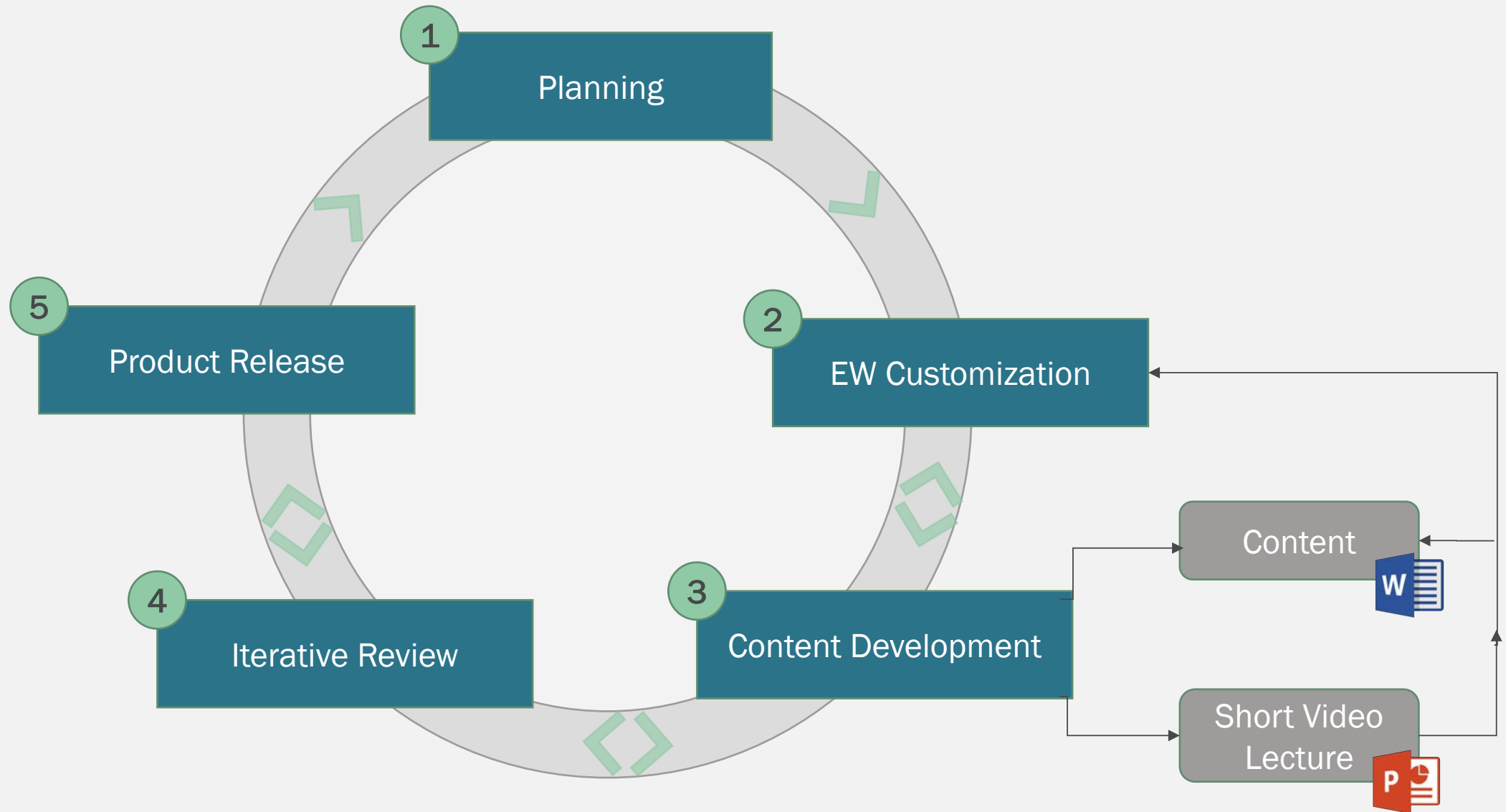


**Activities &  
Assessments**



**Virtual Reality**

# Workflow





# Question and Answers

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# Educational Technology

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# Platform for Course Delivery, Management and Tracking

- Free to use and extend
  - [Github](#)
- Dedicated support
  - Slack ([openedx](#))
  - [Mailing Lists](#)
  - [Confluence](#)
- [Technical Documentation](#)
- Utilized by several large contributors
  - MIT and Harvard founders



# Learning Management System (LMS)

## Navigating the LMS interface:


- ✓ Dashboard of Enrolled Courses
- ✓ Course Introduction and Overview
- ✓ Modules and Sections
- ✓ Review and Progress

# Content Management System (CMS)


Improve course development efficiency, consistency, and errors.

- ✓ Course Components for EducateWorkforce  
Add a content page to a new module section within an existing course.
- ✓ Template Course  
Create a three module course with limited number of sections per module.

# Insights (Analytics)

 **EducateWorkforce** **INSIGHTS**

course-v1:CUCWD+EAM101+2015\_Summer

Help  DemoInstructor ▾

[Course Home](#) [👤 Enrollment](#) [📊 Engagement](#) [☑ Performance](#)

### Who are my students?

👤 Enrollment

How many students are in my course?  
👤 ▶ Activity

How old are my students?  
👤 ▶ Demographics ▶ Age

What level of education do my students have?  
👤 ▶ Demographics ▶ Education

What is the student gender breakdown?

### What are students doing in my course?

📊 Engagement

How many students are interacting with my course?  
📊 ▶ Content

How did students interact with course videos?  
📊 ▶ Videos

### How are students doing on course assignments?

☑ Performance

How are students doing on graded course assignments?  
☑ ▶ Graded Content

How are students doing on ungraded exercises?  
☑ ▶ Ungraded Problems

# Insights Analytics: Enrollment

- Demographics (Education)  
presents data computed for the 80.0% of enrolled students who provided a highest level of education completed.

\* All metrics below are computed from the provided highest level of education completed from account settings.

- Advanced Degree
- College Degree
- High School Diploma or Less

Account  
Settings

✓

Doctorate

Master's or professional degree

Bachelor's degree

Associate degree

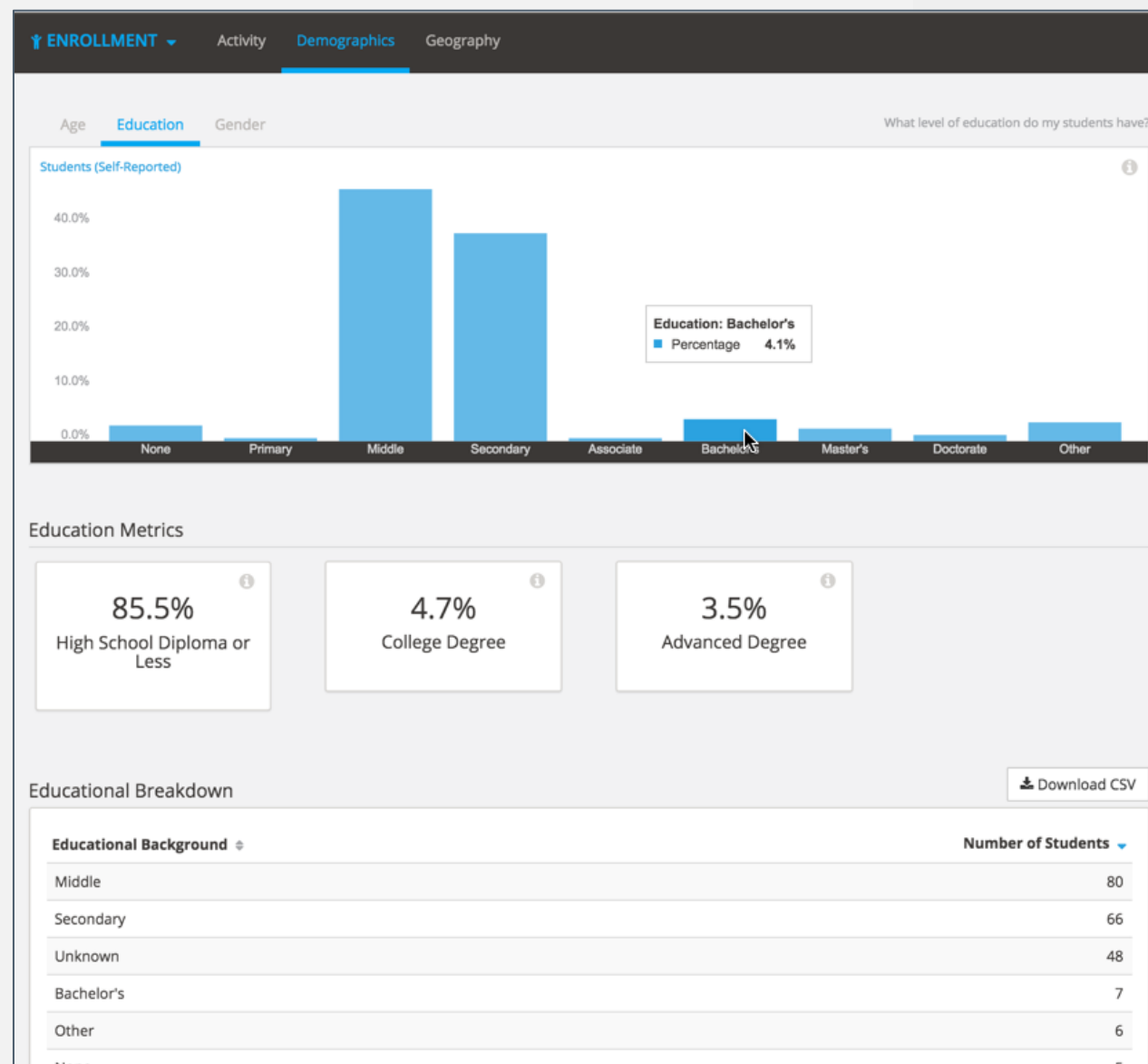
Secondary/high school

Junior secondary/junior high/middle school

Elementary/primary school

None

Other

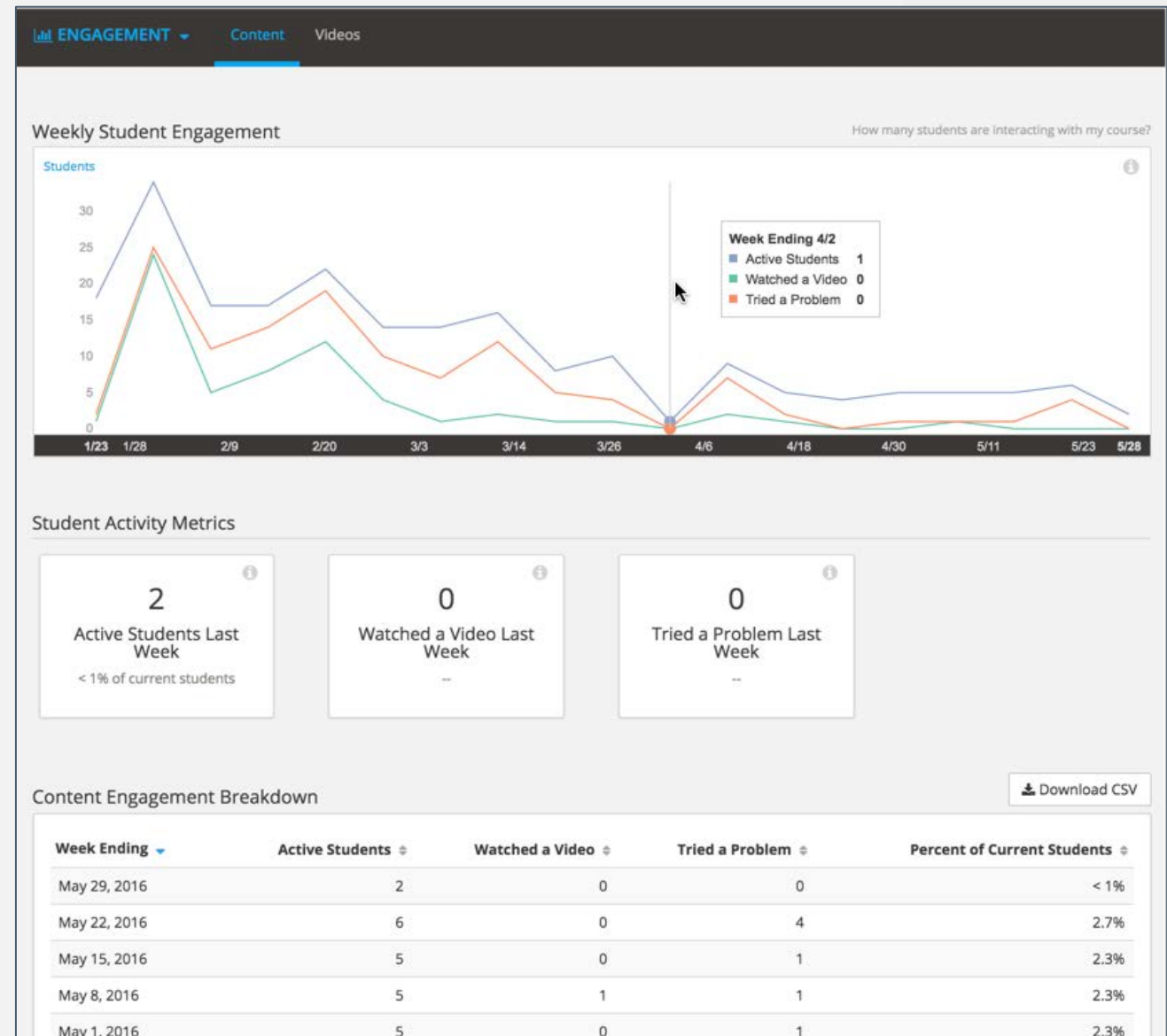


# Insights Analytics: Engagement

- Content  
number of active students and specific activities (watch video, tried problem) engaged with.

\* Information is presented weekly.

- Active Students  
visited one page of course content.
- Watched a Video  
played one or more videos.
- Tried a Problem  
submitted answer for standard problem.

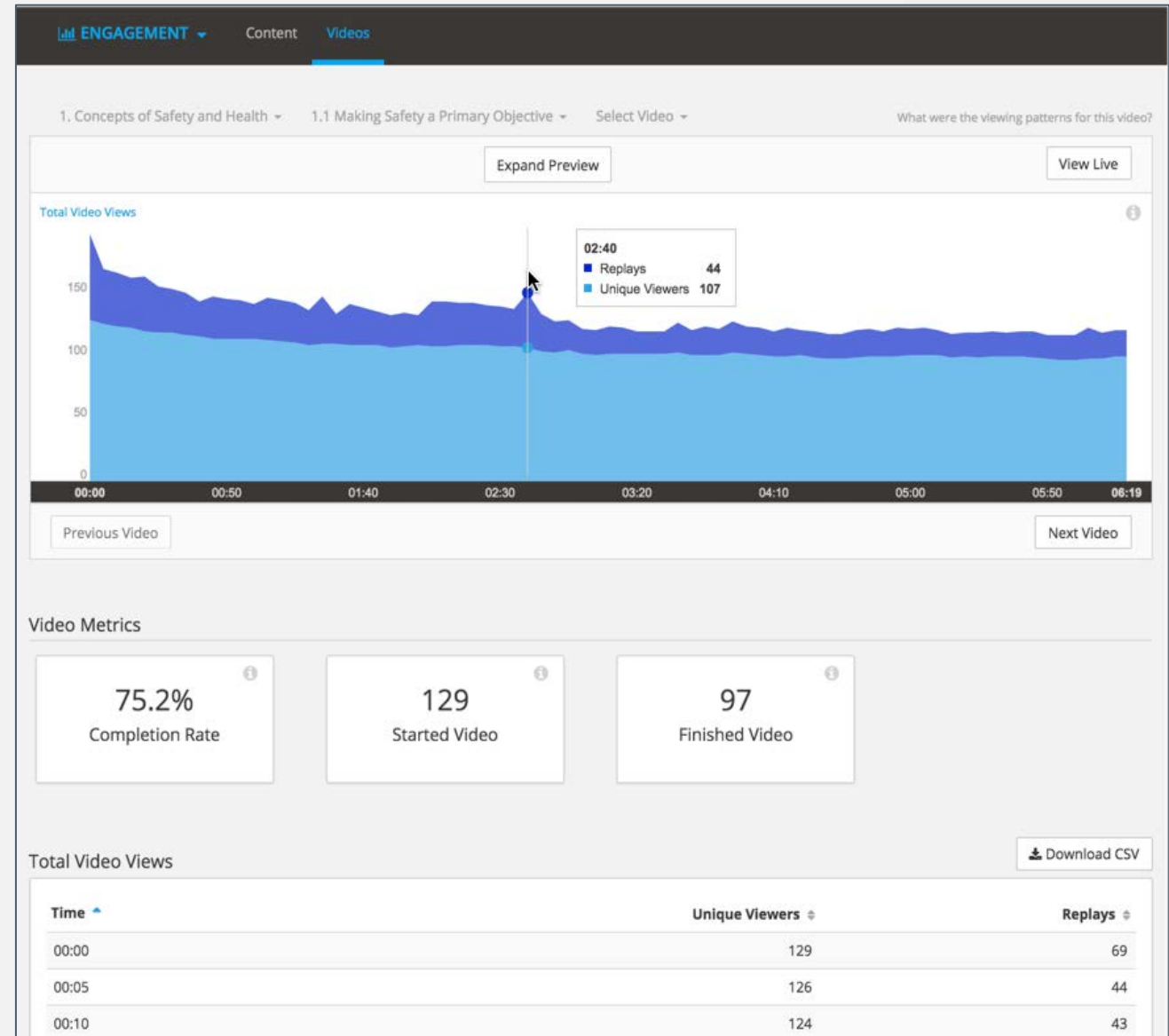


# Insights Analytics: Engagement

- Video Viewing Pattern  
chart shows number of learners who watched each segment of the video, and the number of replays for each segment.

\* View Live button reveals LMS content.

- Completion Rate  
estimated percentage of learners who watched the entire video.
- Started Video  
learners who started watching the video.
- Finished Video  
learners who watched the video to the end.



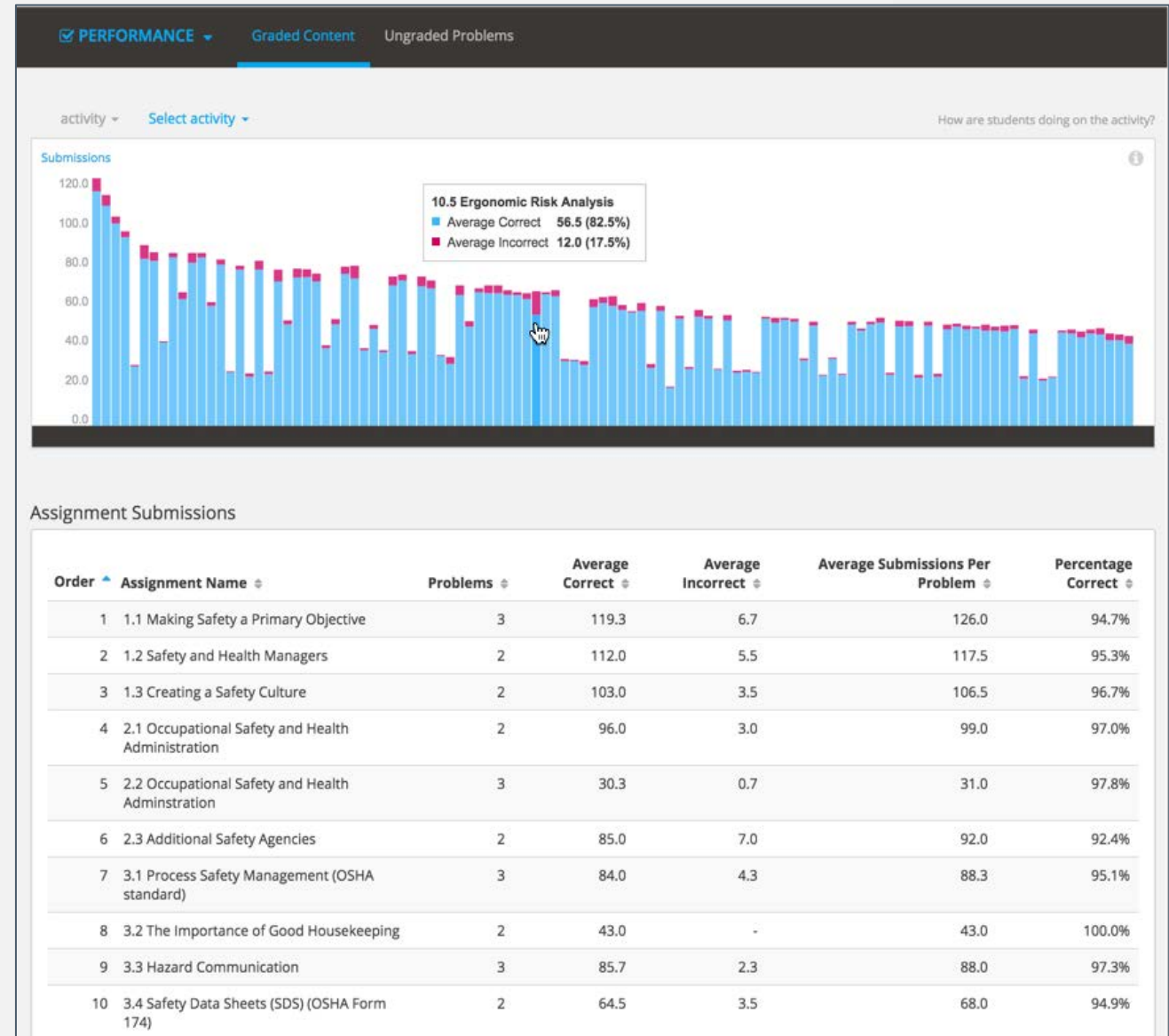
# Insights Analytics: Performance

- Graded Problem Content  
each bar shows the average number of correct and incorrect submissions for problems within a section.

\* Only the last submission from each learner is counted.

- Activities are setup to have infinite attempts.
- Module Reinforcements generally allow for 1 attempt.

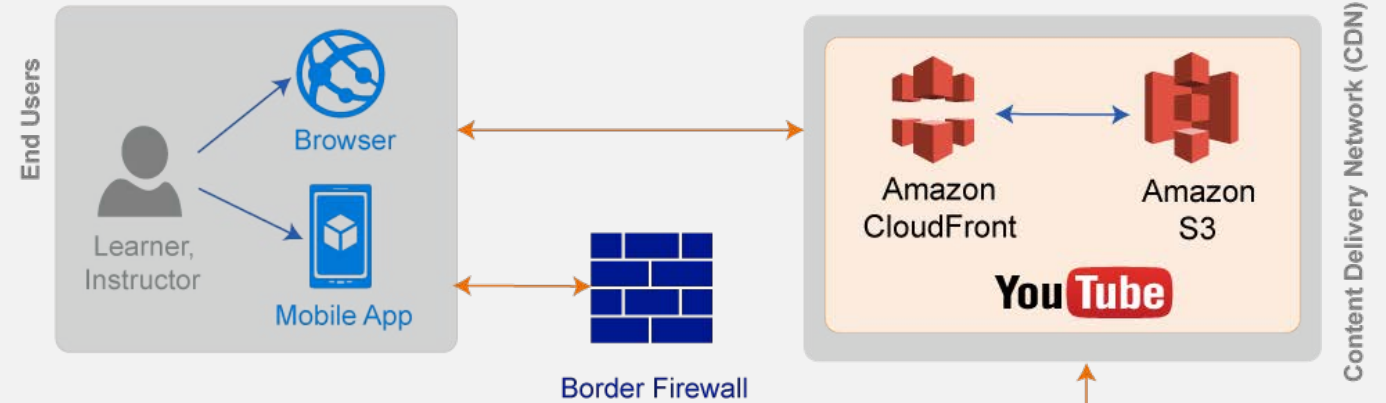
(Exception: Drag and Drop problems due to difficulty level; these problem types are setup as infinite attempts)



# On-Premise Hosting Infrastructure

- Cost savings were a factor when deciding to host locally.
  - Future hosting will migrate to a cloud provider to accommodate more users and keep costs lower.
- Data store (MySQL, MongoDB) and web applications (Insights, LMS, and CMS) are fault tolerant and reliable systems.

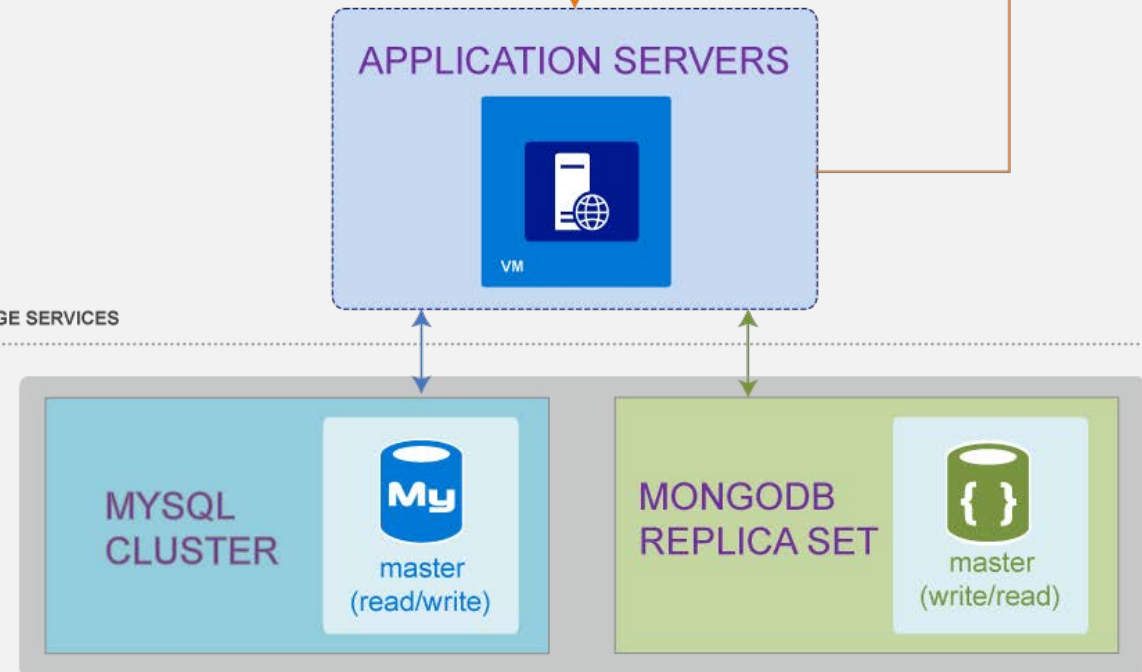
## PUBLIC NETWORK



## PRIVATE NETWORK

### WEB SERVERS

### STORAGE SERVICES





# Question and Answers

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# Support Protocol

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Technical support provided

# Help Form

- Provides easy way for learners to submit issues to the EducateWorkforce support team.
- Three ways to submit an issue through this form.
  - **Report a problem**
    - Account Registration, Login, or Activation
    - Page Error
    - Course Content or Problem
  - **Make a suggestion**
  - **Ask a question**



## EducateWorkforce HELP

Have **general questions about EducateWorkforce**? You can find lots of helpful information in the EducateWorkforce [FAQ](#).

Have a **question about something specific**? You can contact the EducateWorkforce general support team directly:

[Report a problem](#)

[Make a suggestion](#)

[Ask a question](#)


Please note: The EducateWorkforce support team is English speaking. While we will do our best to address your inquiry in any language, our responses will be in English.

# Email Response


- Correspondence through email between EducateWorkforce support staff and the ticket submitter.
- Provides open line of communication and tracking.


Reply all | Delete | Junk | ...



[CUCWD JIRA] (EWS-654) page-error : lms

 CUCWD Jira Administrator (JIRA) <eduworkforce\_support@clemson.edu>  
Tue 1/19/2016, 10:49 AM  
Zachary J Trabookis

Jira

 CUCWD Jira Administrator **created** an issue


EducateWorkforce Support /  EWS-654  
**page-error : lms**

Issue Type:  Page Error  
Assignee: EducateWorkforce Support  
Created: 19/Jan/16 10:48 AM  
Priority:  Major  
Reporter: CUCWD Jira Administrator

**Ticket Details**  
Ticket Submitter: Steven K <sk@cl...@clemson.edu>  
Issue Type: problem  
Issue Type Detail: page-error  
Problem Description Brief: Simulation isn't loading.  
Problem Description Details: I've downloaded and redownloaded the Unity WebPlayer 3 times on my compute  
Application: lms  
Location: None  
Course Id: course-v1:Clemson+ME2220+2016\_Spring  
Additional Information:

# Customer Support

- Ability for the EducateWorkforce support team to keep track of progress of issues submitted.
- Ticket details include information necessary for evaluating a group of tickets as time progresses with the system.

 EducateWorkforce Support / EWS-654

## page-error : lms

Edit

Comment

Assign



More ▾

Stop Progress

Done




Admin ▾

### Details

Type:	 Page Error	Status:	<b>IN PROGRESS</b> <a href="#">(View Workflow)</a>
Priority:	↑ Major	Resolution:	Unresolved
Labels:	None		
Ticket Submitter:	sk  @clemson.edu		
Application:	lms		
Institution:	clemson		

### Description

#### Ticket Details

Ticket Submitter: St  K  <sk  @clemson.edu>

Issue Type: problem

Issue Type Detail: page-error

Problem Description Brief: Simulation isn't loading.

Problem Description Details: I've downloaded and redownloaded the Unity WebPlayer 3 times on my computer and the simulation load. I've even tried different browsers.

Application: lms

Location: None

Course Id: course-v1:Clemson+ME2220+2016\_Spring

Additional Information:

- username: skasay
- Client IP: 198.21.188.194
- Host: educateworkforce.com
- Page: [https://educateworkforce.com/courses/course-v1:Clemson+ME2220+2016\\_Spring/courseware/c8f7f1dfc160445b85e751175f9925fe/aef8af8240fa4d25a702dacb173730dc](https://educateworkforce.com/courses/course-v1:Clemson+ME2220+2016_Spring/courseware/c8f7f1dfc160445b85e751175f9925fe/aef8af8240fa4d25a702dacb173730dc)
- Browser: Mozilla/5.0 (Macintosh; Intel Mac OS X 10\_11\_2) AppleWebKit/601.3.9 (KHTML, like Gecko) Version/9.0.2 Safari/601.3.9

Please read over the Troubleshooting Documentation pages while support looks in your issue.



# Question and Answers

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# Q&A and Resources

- **What is the pricing model for EducateWorkforce?**
  - Answer: Individuals can access and evaluate the course material at no cost for trial and full course offerings on the [courses](#) page. Please contact [info@educateworkforce.com](mailto:info@educateworkforce.com) to discuss the Class Section and Subsite options.
- **How difficult is it to setup a hosting environment for Open edX?**
  - Answer: Open edX is a complex online learning platform that requires in-depth knowledge of server and hosting infrastructure technology. Here are some links that will help you get started installing Open edX in your environment.
    - Releases - <https://openedx.atlassian.net/wiki/display/DOC/Open+edX+Releases>
    - Documentation - <http://docs.edx.org/>
- **What type of hardware is needed to use the EducateWorkforce platform?**
  - Answer: Desktop computer with any common browser (Internet Explorer, Firefox, Chrome, Safari). Refer the <https://educateworkforce.com/resources> page for additional information.
- **How to register for an account on the EducateWorkforce platform?**
  - Answer: Go to <https://educateworkforce.com/register> page, complete the required fields then click the *Create Account* button to continue. Click the link provided in the activation email to verify that the registered email on the newly created account is yours. This will provide you with continued usage of the EducateWorkforce system after initial account creation.
- **How do I reach technical support?**
  - Answer: Click the Help Form located on the left side of any Learning Management System (LMS) page then submit your issue to support. An email will be sent to your registered EducateWorkforce account email. All correspondence is handled through email with EducateWorkforce support. Alternatively you can send email directly to [support@educateworkforce.com](mailto:support@educateworkforce.com).