Instructional Design

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Webinar Introductions

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Agenda

What we will learn about instructional design today:

- Get to Know Your Audience
- Identify Your Development Foundations
- Establish Your Work Plan
- Launch Your Course and Gather Feedback
- 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
Instructional Design Process

1. Get to Know Your Audience
2. Identify Your Development Foundations
3. Establish Your Team & an Efficient Work plan
4. Launch Your Course & Gather Feedback for Continuous Improvement
Get to Know Your Audience
Focus Question 1

How does your audience affect the way you develop your online courses?

Please post responses in the chat window and make sure to share responses with “Everyone.”
Identify Your Audience

- Who are they?
- What are their expectations?
- What do they want or need?
- What are their obstacles?
How to Get to Know Your Audience

- Relationships
- Phone calls
- Research
- Forums and conferences
- Surveys, questionnaires, interviews
Our Audience

- Technical colleges
- Industry partners
- K-12 education
- State and Federal government

Developed through–

Relationships
Data collection
Providing venues for communication
Audience Drives Course Design

**Manufacturing Skills Standards Council (MSSC) Courses**
- Who – Industry, Technical Colleges, K12 CTE
- Skilled Workforce
- Education Materials
- Career Pathways

**Federal Aviation Administration (FAA) Courses**
- Who – Industry, Technician Programs, Military, FAA
- Certified Technicians
- Online Education Materials
- Better Access to Courses
When It Does Not Work

Skills for Employment Success
- Who – SC DEW, SC Job Ready U, Workforce
- Build Job Skills
- Increase Employment Participation

Our Team Did Not Consider
- Audience Expectations
- Knowledge Level
- Obstacles
EducateWorkforce Offerings

- INTRODUCTION TO METROLOGY
- QUALITY IN MANUFACTURING
- MANUFACTURING PROCESSES & PRODUCTION
- MANUFACTURING SAFETY
- MANUFACTURING MAINTENANCE
- BASIC ELECTRICITY
- WORKFORCE FUNDAMENTALS
- EXPLORING ADVANCED MANUFACTURING
- EXPLORING ENGINEERING
- SOFT SKILLS IN MANUFACTURING
- PATHWAY TO TECHNOLOGY ENTREPRENEURSHIP
Question and Answers

Focus Question 1

How does your audience affect the way you develop your online courses?
Identify Your Development Foundations
Focus Question 2

What do you use as a development foundation for your online courses?

Please post responses in the chat window and make sure to share responses with "Everyone."
Tailored Approach to Course Design

Goal
Student Learning and Performance

Technology
Educational Philosophy
Learning Design
Learning Theory
## Learning Theory

### CAST: Universal Design for Learning (UDL)

<table>
<thead>
<tr>
<th>Principle</th>
<th>Network</th>
<th>The <strong>WHAT</strong> of Learning</th>
<th>The <strong>HOW</strong> of Learning</th>
<th>The <strong>WHY</strong> of Learning</th>
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<tbody>
<tr>
<td>Principle 1</td>
<td>Affective Network</td>
<td></td>
<td>Provide Multiple Means of Engagement to stimulate interest and motivation</td>
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<td>Principle 2</td>
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<td>The <strong>WHAT</strong> of Learning</td>
<td>Provide Multiple Means of Representation to reach all learning styles</td>
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<td>Principle 3</td>
<td>Strategic Network</td>
<td>The <strong>HOW</strong> of Learning</td>
<td>Provide Multiple Means of Action &amp; Expression to provide options for expressing knowledge</td>
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UDL as a foundation for EducateWorkforce Curriculum

Affective Network

Principle 1

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.
UDL as a foundation for EducateWorkforce Curriculum

Recognition Network

The WHAT of Learning

Provide Multiple Means of Representation to reach all learning styles

- Open Text & ePub
- Video Lectures
- Virtual Reality
- Glossary

- ✓ Key content presented in multiple formats
- ✓ Key terms are highlighted and defined
- ✓ Content adheres to web accessibility standards
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
Focus Question 2

What do you use as a development foundation for your online courses?
Establish Your Team & Work Plan
Focus Question 3

What is the work plan for your development team how is it helpful to your development process?

Please post responses in the chat window and make sure to share responses with “Everyone.”
Who Do You Need on Your Team?

Depends on:

- Organization Size
- Scope of the Course
- Types of Learning Materials
- Skill combination of Team Members
- External or internal development
Who Do You Need on Your Team?

Likely Team Roles:
- Instructional Designer
- Developer/Programmer
- Subject Matter Expert (SME)

Could also include:
- Graphic Designer
- Virtual Reality Developer
- Game Designer
- Videographer
- Project Manager
- Quality Assurance/Editor
EducateWorkforce Team

**Internal**
- Instructional Designer
- Programmer/Developer
- Virtual Reality Developer
- Graphic Designer
- Quality Assurance Personnel

**External**
- Subject Matter Expert
- Videographer
- Instructional Designer
- Editor
EW Team Roles

**EducateWorkforce Team**

- Instructional Designer
- Programmer/Developer
- Virtual Reality Developer
- Graphic Designer
- Subject Matter Expert
- Videographer
- Quality Assurance Personnel
Establish a Work Plan

Adaptive Approach

- Structured
- Iterative
- Monitoring
Structure

- Templates
- Course organization
- EducateWorkforce LMS
- Project management system

Templates

Course Development Template
Course 3 ~ Course Title

X. Module (Textbook Page Numbers)
X.X Lesson Name

1. Types and Forms of Corrosion (1-7)
   1.1. Types of Corrosion
   1.2. Forms of Corrosion
   1.3. Factors Affecting Corrosion, Preventive Maintenance, and Inspection
2. Corrosion Prone Areas and Removal (7-11)
   2.1. Common Trouble Areas
   2.2. Corrosion Removal
3. Categories of Metal Corrosion and Their Treatments (11-17)
   3.1. Corrosion of Ferrous Metals

Learning Management System
Iterative

- Develop
- Review/Feedback
- Make Changes

EW Development Process

1. Develop
2. Review
3. Make Changes

Next Development Stage
Monitoring

- Project management
- Communication
- Regular meetings
Focus Question 3

What is the work plan for your development team and how is it helpful to your development process?
Launch Your Course and Gather Feedback
Focus Question 4

What tool do you use to gather feedback and why do you think this tool is helpful?

Please post responses in the chat window and make sure to share responses with “Everyone.”
Pilot the Course First

Course Pilot Model

- Pilot
- Get Feedback
- Make Changes
- Launch
How to Get Feedback

Tools for Collecting Feedback

- Analytic Software
- Pre/post test
- Questionnaires
- Embedded Questions
- Interviews
- Focus groups
Analytic Software

Captures Demographics

- Age
- Gender
- Education
- Enrollment
Analytic Software

Captures Performance

- Average correct
- Average incorrect responses
- Average submissions per problem
Pre and Post Tests

Measuring Outcomes

- Measures prior knowledge
- Measures knowledge after the course
- Comparison provides measure of learning
- Informs instructional improvements

![Bar Chart](chart.png)

Student Average

- Pre Test
- Post Test
Questionnaires

- Objective, valid, reliable
- Easily implemented
- Data easily analyzed

Embed Questions

- Ask within the course
- Test efficacy of teaching tool

This simulation improved my ability to construct a tube assembly.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly Agree
Interviews and Focus Groups

**Interviews**
- Provides greater detail and depth
- Adds human dimension to statistical data
- Opportunity to seek clarification
- Student voice heard

**Focus Groups**
- More efficient than single interviews
- Details about group feelings and perceptions
- Broader range of information
Evaluating Course Feedback

Compare Goals with Student Feedback

- Were we successful?
- Did students learn?
- Did they have fun?
- What should you change?
- Make changes and launch again
Focus Question 4
What tool do you use to gather feedback and why do you think this tool is helpful?
Question and Answers