Welcome to ‘Tech Integration and Instructional Design’

Adult Education Institute
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Superintendent of Public Instruction

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Ed Tech
Ed Tech Survey

Email sent out August 1\textsuperscript{st} to approximately 360 people

Reminder sent out August 9\textsuperscript{th}

Sent out snapshot of results on September 6\textsuperscript{th}

Analysis of written responses found...
Ed Tech Survey

Online curriculum

Benefits:
- Students can control pace
- 24/7 availability

Limitations:
- Hardware/software/connectivity issues
- Doesn’t replace face-to-face interactions
- Lack of engagement with content
Ways to support blended learning

• Embed online activities into face-to-face lessons
• Encourage students to go online outside of class time
• Provide access to online content and labs
• Teach digital literacy skills (e.g. how to use the online curriculum)
Challenges implementing blended learning

- Student’s have a technology skill deficit
- Student’s have limited access to technology
- ‘Teacher-centric’ issues (planning, using etc.)
- Student buy-in / actually using the resources
- Issues with on-site access (WiFi in classrooms, computer access)
Ed Tech Survey

How do we overcome the challenges of implementing blended learning

• Provide access to computers and tech support to students (open labs etc.)
• Teach/scaffold technology skills during class time
• Instructor-centered solutions such as more time for planning lessons, support in implementing a blended learning model in unique contexts etc.
The Computer-Based GED®

“The 2014 GED® program ensures that your high school equivalency provides you with the skills and knowledge necessary to take the next critical steps in your life and succeed in today’s digital world.” – GED®

• The GED® is now entirely computer-based

• Test-takers must be able to type approximately 25 words per minute

• Familiarity with computers and digital information is a MUST

• Tests consist of 7 different item types:
  • Extended response (typing)
  • Drag-and-drop
  • Drop-down
  • Fill-in-the-blank
  • Hot spot
  • Multiple choice
  • Short answer (typing)

https://www.gedtestingservice.com/testers/mygedfaqs?_ga=2.174779430.588941207.1500065525-1203356533.1497370057#TAKINGTEST
The Computer-Based GED®

<table>
<thead>
<tr>
<th></th>
<th>Pencil and paper version</th>
<th>GED® test on computer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scheduling your test</strong></td>
<td>Call or visit a testing center during business hours</td>
<td>Register and schedule online, 24/7</td>
</tr>
<tr>
<td><strong>The test pace</strong></td>
<td>Wait on the entire group</td>
<td>Finish one section and move on</td>
</tr>
<tr>
<td><strong>The essay</strong></td>
<td>Handwritten essay</td>
<td>Type your essay</td>
</tr>
<tr>
<td><strong>Score results</strong></td>
<td>Could take several weeks</td>
<td>Instant results (unofficial)</td>
</tr>
</tbody>
</table>
Digital Literacy

Digital literacy is:

... the skills associated with using technology to enable users to find, evaluate, organize, create, and communicate information.

Building a student's digital literacy is building their capacity to participate in the modern workforce and society.
Beyond ELLA, ABE and the GED®

Apply for jobs online

Apply for college online

Take college classes online

Apply for some Social Security benefits online

Apply for health insurance online

Pay utility bills online

Pay taxes online

Online banking

Online shopping
Tech Integration - You are the Driver

https://en.wikipedia.org/wiki/Technology_adoption_life_cycle
The TAM models how users come to accept and use a technology. When users are presented with a new technology, they make choices about adopting it based upon:

- **Perceived usefulness (PU)** – the belief (or lack of) that using a particular system would enhance his or her job performance

- **Perceived ease-of-use (PEOU)** – the belief (or lack of) that using a particular system would be free from effort


Technology Integration Matrix

https://fcit.usf.edu/matrix/matrix/

Google ‘technology integration matrix’
Side note: TIM has also been adapted to suit our Arizona Context

Google ‘az technology integration matrix’
Building an AZ Adult Education TIM

You will be assigned a section of our TIM (link below) to develop.

Record an example of technology integration that you do in your adult education classroom that ‘fits’ into your assigned section.

(You can describe the same activity across multiple cells, highlighting how it gets more advanced as you move to the right...)

Instructional Design

**Instructional design** is the process of developing lessons or entire courses in a way that ensures they best meet your students needs. When we look at it through a technology lens, it’s focus is on meeting those needs with technology playing a central role.
Meetingwords.com/AZEDTECH

*Duplicate if more than 32 users

Workspace

Chat

Name
The ADDIE Model

http://educational-technology.thinkific.com/courses/the-addie-model-for-instructional-design-certificate-online-training
https://educationaltechnology.net/the-addie-model-instructional-design/
https://en.wikipedia.org/wiki/ADDIE_Model
Phases of ADDIE

Analysis
• Who are the learners?
• What are the learning goals?
• What constraints exist?
  • Consider technology available for you in-class and for students outside of class
• What are the delivery and pedagogical considerations?
• How might you assess learning?

Design
• What is the best teaching strategy we can follow to ensure students attaining the learning goals.
  • Blended learning?
  • Direct instruction?
  • Technology rich?

Development
• Create lesson content, create the lesson plans and plan for technology integration.

Implementation
• Revise the technology you plan on using and make sure you know how to use it!
• Teach!

Evaluation
• Were the key ideas understood?
  • Assessment should clarify this
• Was learning engaging?

https://elearningindustry.com/getting-know-addie-evaluation
In what ways is the ADDIE model useful to follow for planning to teach adults in your program?

You might need to seek out additional information online to inform your response, but be efficient with your time!

Early finishers consider: What’s ADDIE’s biggest flaw?
The ARCS Model

**Attention**
- Engage
- Signpost
- Activate
  
  Use real stories, branding and challenges

**Relevance**
- Signpost
- Assumptions
- Knowledge
  
  Identify clear benefits, relate to work situations

**Confidence**
- Guidance
- Performance
- Feedback
  
  Contextualize assessment exercises and scenarios.

**Satisfaction**
- Reinforce
- Acknowledge
- Summarize
  
  Track completion of learning and praise performance

[https://www.arcsmodel.com/arcs-categories](https://www.arcsmodel.com/arcs-categories)
ARCS – Motivating Learners

Attention

• Gained by surprise, doubt, disbelief, or challenging problems that need to be solved.

Relevance

• Use language, analogies or stories to which the learner can relate.

Confidence

• Help learners believe that they can succeed!

Satisfaction

• Satisfaction and motivation are strongly related.
• Make the learners proud of what they have achieved!
In what way do you think ARCS is relevant to adult learners?

Early finishers consider: Why might some students in your class be more motivated than others?
Knowles’s Theory of Andragogy

Self-concept
• Adults tend to be self-directed.
• Adults tend to resist situations where others impose their will on them

Experience
• Adults best respond to learning that acknowledges their life experiences

Readiness and Orientation to learn
• Adults are eager to learn what can help them now, in their own life

Motivation to learn
• Intrinsic (desire for more fulfilling job, self-esteem) and extrinsic (higher pay) motivators help them focus

The need to know
• Adults like to know ‘why’ they are learning something

What similarities do you see between Knowles’s theory of Andragogy and ADDIE?

How about Andragogy and ARCS?
Visualizing our notes...
In groups, choose 1 of the 3 models we have explored so far (ADDIE, ARCS, Knowles).

Where does technology fit into that model? Consider each element from that model and be prepared to share your group’s ideas with all of us.
Understanding By Design
(aka Backward Design) - UBD

Identify Desired Results
What do my students need to know and be able to do?

Determine Acceptable Evidence
How are my students going to be able to demonstrate that they know it and can do it?

Plan Learning Experiences and Instruction
How are my students going to learn what they need to know and be able to do?

Universal Design for Learning - UDL

Three principles:

1. To offer multiple, flexible ways to present what is being taught (representation)
2. To provide flexible ways in which students can express what they know (expression)
3. To ensure there is a range of options for sustaining motivation (engagement)
UBD and UDL as one...

UBD begins the instructional design process by considering the desired result for a lesson.

A principal driver of UDL is flexibility in what students produce as evidence of their learning.

Consider how these 2 design processes interplay.

**Desired results vs flexibility of evidence**

(UBD) (UDL)
Team Activity

What was (or might be) a ‘typical’ desired result for one of YOUR lessons?

How might you adapt that to be a more FLEXIBLE desired result so that it aligns with principles of UDL? Can technology help?

In our Google Doc, record your original desired result and then record possible adaptations to enhance flexibility of expectations.


Marzano, Pickering, and Pollock identified nine broad teaching strategies that have positive effects on student learning.

Table 1.1: Categories of Instructional Strategies that Strongly Affect Student Achievement

<table>
<thead>
<tr>
<th>Category</th>
<th>Ave. Effect Size</th>
<th>Percentile Gain*</th>
<th>N</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifying similarities and differences</td>
<td>1.61</td>
<td>45</td>
<td>31</td>
<td>.31</td>
</tr>
<tr>
<td>Summarizing and note taking</td>
<td>1.00</td>
<td>34</td>
<td>179</td>
<td>.50</td>
</tr>
<tr>
<td>Reinforcing effort and providing recognition</td>
<td>.80</td>
<td>29</td>
<td>21</td>
<td>.35</td>
</tr>
<tr>
<td>Homework and practice</td>
<td>.77</td>
<td>28</td>
<td>134</td>
<td>.36</td>
</tr>
<tr>
<td>Nonlinguistic representations</td>
<td>.75</td>
<td>27</td>
<td>246</td>
<td>.40</td>
</tr>
<tr>
<td>Cooperative learning</td>
<td>.73</td>
<td>27</td>
<td>122</td>
<td>.40</td>
</tr>
<tr>
<td>Setting goals and providing feedback</td>
<td>.61</td>
<td>23</td>
<td>408</td>
<td>.28</td>
</tr>
<tr>
<td>Generating and testing hypotheses</td>
<td>.61</td>
<td>23</td>
<td>63</td>
<td>.79</td>
</tr>
<tr>
<td>Activating prior knowledge</td>
<td>.59</td>
<td>22</td>
<td>1251</td>
<td>.26</td>
</tr>
</tbody>
</table>

Note: N = Number of effect sizes. SD = standard deviation.

*These are the maximum percentile gains possible for students currently at the 50th percentile.
Activity 3

In groups, create a slide about your assigned teaching strategy from Marzano, Pickering, and Pollock.

Include:

- An explanation of the strategy
- An example of how tech integration can complement the strategy
- Multimedia (video, image, etc.) to demonstrate the strategy in action


https://docs.google.com/presentation/d/1dniH1UbimPnhLm5dBKQqxNci7UJ8RzrKOL45wTPW8QM/edit?usp=sharing
Key questions for instructional design:

1) “How will I engage and motivate my learners?” (ADDIE, ARCS, Gagne Briggs, UDL, Knowles, TAM)
2) “What is my desired outcome for my learners?” (ADDIE, Gagne Briggs, UBD, Knowles)
3) “How will I achieve the desired outcome?” (ADDIE, Gagne Briggs, Marzano Pickering Pollock, UBD, UDL, TAM, Knowles)
4) “How do I know I achieved the desired outcome?” (ADDIE, Gagne Briggs, UBD, UDL)
Thank you for your participation

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“We learn more by looking for the answer to a question and not finding it than we do from learning the answer itself.”