

## Instructional Strategies, Methods, & Technologies

Purpose: This job aid is intended to help trainers select effective instructional strategies and technologies during the instructional design process. Note that the referenced technologies are purely examples; inclusion does not indicate preferential policy towards any particular vendor or company. For technologies requiring installation on government systems, there may be additional security or IT support requirements.

When to Use: After composing learning objectives, instructional designers construct basic lesson outlines. Part of this process involves determining which instructional strategies will result in effective learning for a given group of learners & content. Although there are many schemes for classifying instructional terms, the table below summarizes conventions assumed in this job aid.

Instructional Strategies	Overarching decisions about how learners interact with learning content, their peers, and their instructors. Examples include: <ul style="list-style-type: none"><li>● Group-paced approach with small groups of learners working together to solve a problem</li><li>● Self-paced instruction in which learners progress at own speed and on own time</li><li>● Coaching tactic in which an experienced employee mentors a learner performing an authentic task</li></ul>
Instructional Methods	Specific techniques used to help learners master objectives. Examples include: <ul style="list-style-type: none"><li>● Demonstration</li><li>● Case Study Method</li><li>● Game-based learning</li><li>● Field study</li><li>● Role playing</li></ul>
Instructional Modes of Delivery	Distribution mechanism for connecting learners with each other, subject material, resources, and instructors. Examples include: <ul style="list-style-type: none"><li>● Mode-how our brains process the material (i.e. visuals, audio, text)</li><li>● Media-how we replicate content for delivery (i.e. video, instructor, handout)</li><li>● Technology- how we max classroom time or extend reach (i.e. web conferencing, wiki, asynchronous discussion board)</li></ul>

Method	Description	Examples	Supporting Learning Technologies
<b>Brainstorming</b>	A quick method to generate ideas that typically involves a recorder jotting down a group's ideas without time for critical comments or feedback. Brainstorming can support group decision making and critical thinking.	Class brainstorm on characteristics of leadership.  Small group brainstorm on solutions to a budget challenge.	Digital brainstorming: <a href="https://bubbl.us/">https://bubbl.us/</a>
<b>Case study</b>	Learners are presented with a contextual situation and must solve problems, identify actions, or make judgements based on the information in the situation. At the end of the case study, the learners are generally provided with the real world solution for comparison. Use case studies for application of learning content or to foster discussion.	An eLearning course introduces a historical example of an ethical dilemma. Without knowing how the example turns out, students must decide what they would do in that situation.	eLearning course module
<b>Compare and Contrast</b>	Highlighting similarities/differences. Use compare and contrast (or examples and nonexamples when teaching a concept (as opposed to facts, principles, or procedures) for the first time.	After instruction about native and nonnative species, ask learners to classify a list of plants.  Venn Diagrams	
<b>Concept Mapping</b>	A web-like diagram for visually-displaying content and exploring relationships.	Concept maps are great for illustrating organizational relationships at lots of different hierarchical levels.	Mapping: <a href="https://bubbl.us/">https://bubbl.us/</a>  Word Clouds: <a href="http://www.wordle.net/">http://www.wordle.net/</a>  Presentations: <a href="http://prezi.com/">http://prezi.com/</a>
<b>Cooperative Learning Groups</b>	Small teams, each with learners of different levels of ability, use a variety of learning activities to improve their understanding of a subject. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of achievement. Provides learners with the tools to work in a collaborative environment.	Jigsaw activity in which each learner in a group/class receives one piece of information and must collaborate with other team members to reach a solution	Google collaboration tools (i.e. docs, hangouts)  Web Conferencing (i.e. Adobe Connect, WebEx, GoToMeeting)  Doodle Poll: (meetings) <a href="http://doodle.com/?locale=en">http://doodle.com/?locale=en</a>
<b>Demonstration</b>	Performing an activity so that learners can observe how it is done prior to practice. Great for hands-on activities like procedures.	Learners observe a demonstration of a chainsaw operator safety delimiting a tree.	Prezi: <a href="http://prezi.com/">http://prezi.com/</a>  YouTube
<b>Discussion</b>	Small or large group exploration of a topic intended to stimulate thought, reflection, and sharing.	Sample questions for a facilitator: <ul style="list-style-type: none"> <li>■ Can you tell me more about that?</li> <li>■ Has anyone else experienced something similar?</li> <li>■ What assumptions are being made?</li> <li>■ Is this a valid argument?</li> </ul>	Threaded discussions: <ul style="list-style-type: none"> <li>■ Common Learning Portal (CLP) community</li> <li>■ Virtual Classrooms (Moodle, Blackboard etc.)</li> <li>■ Training Websites (i.e. Custom Google Site)</li> <li>■ Sharepoint</li> <li>■ Social media</li> </ul> Blogs & Online Journals, Google collaboration tools (i.e. docs, hangouts), & Web Conferencing (i.e. Adobe Connect, WebEx, GoToMeeting)

<b>Drill</b>	Repetition of specific psychomotor or cognitive skills to build competency through transferring knowledge from working to long-term memory.	Marksmanship training for law enforcement rangers.	Flash Cards: <a href="http://www.flashcardmachine.com/">http://www.flashcardmachine.com/</a> Content creation software for building websites and apps (i.e. Adobe Creative Cloud)
<b>Field Trip/ Observation</b>	Learners visit a place away from their regular environment to acquire information needed to support a specific learning objective. The instructor/guide may provide background material concerning the site. Motivates participants and shows the relationship between provided information and the reality of the location.	Visiting park units or other significant sites for place-based learning, observation, reflection, or interviewing.  Or arranging a site visit to a relevant job environment (i.e. preservation shop).  Immersion in wildlife habitat for discovery and guided learning.	Virtual tour of Grand Canyon: <a href="http://www.nps.gov/grca/photosmultimedia/virtualtour.htm">http://www.nps.gov/grca/photosmultimedia/virtualtour.htm</a>  Electronic Field Trip: <a href="http://www.nationalparks.org/our-work/programs/electronic-field-trip">http://www.nationalparks.org/our-work/programs/electronic-field-trip</a>
<b>Gaming</b>	Learners apply game-based principles and mechanics (i.e.rules, turn taking, competition) to a learning situation. Great for increasing engagement when game is relevant to learning objectives.	Jeopardy review game.  Awarding points for class participation that lead to nominal rewards of some kind.	Online simulations and video games  E-clickers/student response systems
<b>Inquiry</b>	Learners receive a new task to perform or some type of assignment requiring research, problem-solving, collaboration, or trial and error. Caution should be exercised for especially dangerous or complex tasks in which injury or insufficient support are areas of concern.	Before providing instruction on collecting an oral history, ask learners to create an oral history with a test subject or peer.	Web Quests: <ul style="list-style-type: none"> <li>■ <a href="http://zunal.com/">http://zunal.com/</a></li> <li>■ <a href="http://webquest.org/freemedia.php">http://webquest.org/freemedia.php</a></li> </ul>
<b>Interactive Multimedia Instruction (IMI)</b>	This term applies to a group of predominantly interactive, electronically-delivered instruction and instructional support products. IMI is a computer-based technology also described as eLearning that integrates a combination of, but not limited to, text, graphics, animation, sound, and video with which the learner interacts.	Self-paced course on how to use the new NPS budgeting system or content management system.	Screen-capture software: <ul style="list-style-type: none"> <li>■ <a href="http://www.techsmith.com/jing-features.html">http://www.techsmith.com/jing-features.html</a></li> </ul> Course creation software: <ul style="list-style-type: none"> <li>■ <a href="http://prezi.com/">http://prezi.com/</a></li> <li>■ <a href="http://www.articulate.com/">http://www.articulate.com/</a></li> <li>■ <a href="http://www.easygenerator.com/">http://www.easygenerator.com/</a></li> <li>■ <a href="http://udutu.com/">http://udutu.com/</a></li> </ul>
<b>Interviewing</b>	A structured conversation between an interviewer and interviewee to obtain information.	Introductory activities in which learners interview each other to find common ground, improve group dynamics etc.  Assign learners to interview experts on challenges, success stories etc.	Google forms  Survey Monkey: <a href="http://www.surveymonkey.com/">http://www.surveymonkey.com/</a>
<b>Lecture</b>	Oral presentation intended to present information to large groups of learners. To keep learners engaged, restructure into “lecturettes” of no more than 6-10 minutes interspersed with opportunities for learner application.	Course introductions in which administrative or operational information can be disseminated prior to breaking class out into smaller groups.	Audacity: <a href="http://audacity.sourceforge.net/">http://audacity.sourceforge.net/</a>
<b>Panel</b>	A group of instructors, guest speakers, and/or experts addresses relevant questions from learners. Great for multiple points of view.	A technology panel fields questions from learners about new trends in mobile learning for parks.	

<b>Peer Learning</b>	Peer learning is a collaborative experience in which learners learn from and with each other for individual purposes.	Pairs or small groups conduct mock facilitated dialogues for practice and feedback.	Breakout rooms within a web conferencing platform  Groups with a virtual classroom setting Project-based learning “publicly presented project” component
<b>Practical Exercise</b>	An activity in which the learner practices a new process or procedure within the safety of a positive learning environment.	Fee collectors practice transactions in a simulated collection booth.	
<b>Problem Solving</b>	Focuses on identifying issues and assumptions prior to determining possible courses of action. Defining what the problem looks like is separated from looking at the cause of the problem to prevent premature judgment.	Students identify courses of action to mitigate a climatology issue.	Branching eLearning course built in custom HTML, Flash, or a rapid development tool (i.e. Captivate, Articulate, Lectora)
<b>Role playing</b>	Learners act out a simulated situation, position, or job. Develops empathy and new insights. Stimulates discussion and communication. Provides a means to assess decision making in a specific role. Allows for a variety of situations and parameters that garner attention, participation, and motivation. Promotes an understanding of other people’s positions and their attitudes as well as the procedures used for diagnosing and solving problems.	A learner may assume the duties of a staff member and perform the work of that position. Other students can evaluate performance against criteria in a given rubric.	Video-teleconferencing
<b>Simulation</b>	Any representation or imitation of reality. Provides the means to safely and efficiently practice an action or activity under any condition.	Learners complete a boating simulation to prepare for a safety course.	Virtual or constructive simulation
<b>Structured Overview</b>	Verbal, visual, or written summary or outline of a topic. Helps learners place new ideas in context. Because ideas are simplified, it is easier for learners to see “the big picture”. In addition, connecting new ideas to information learners already know improves retention.	Visually construct (or ask learners to construct) flowcharts for use in the learning environment.  Graphic organizers  Use flowcharts for concept mapping, instructional lead-ins, and review.	Word Cloud: <a href="http://www.wordle.net/">http://www.wordle.net/</a>
<b>Tutorial</b>	“How-to” procedural guidance on completing a task.	Simple <a href="#">tutorial on using Google Hangouts</a> created in Prezi	Screen-capture software: ■ <a href="http://www.techsmith.com/jing-features.html">http://www.techsmith.com/jing-features.html</a>  Presentation software: ■ <a href="http://prezi.com/">http://prezi.com/</a>
<b>Writing</b>	Variety of assignments related to submission of original content for sharing and/or peer and instructor feedback.	Sample blog post assignment for a web author learning how to operate in NPS.gov	Rubric tools for grading assignments: ■ <a href="http://rubistar.4teachers.org/">http://rubistar.4teachers.org/</a> ■ <a href="http://www.teach-nology.com/web_tools/rubrics/">http://www.teach-nology.com/web_tools/rubrics/</a>