

# COMPUTER-AIDED SIMULATIONS



When are simulations an appropriate learning solution? If the instructional/training issue meets one or more of the following criteria, a simulation may be appropriate.

<input checked="" type="checkbox"/>	Criteria	Examples
<input type="checkbox"/>	Dangerous consequences associated with error when learning in the actual environment.	Virtual knee surgery simulation <a href="http://www.edheads.org/activities/knee/">http://www.edheads.org/activities/knee/</a>
<input type="checkbox"/>	Learning which requires an extraordinary amount of repeated practice - cost to "stage" with real people and equipment too high.	Anthrax emergency preparedness <a href="http://www.thepodgame.com/index.html">http://www.thepodgame.com/index.html</a>
<input type="checkbox"/>	Learning which would require students to view a process that would normally not be able to be recreated in real life or to which students could get as close as within a simulation	Process of nuclear power <a href="http://energyexperts.areva.com/areva_us.html">http://energyexperts.areva.com/areva_us.html</a>
<input type="checkbox"/>	View "what if" scenarios based on factors/conditions.	Oil policy simulation. Based on factors given, the users can make decisions to reduce oil imports and see what would happen if they made certain decisions. <a href="http://forio.com/simulation/oil/index.htm?FD_rand=7331">http://forio.com/simulation/oil/index.htm?FD_rand=7331</a>
<input type="checkbox"/>	Geographically dispersed learners - high travel costs, time away from work.	International business professionals in multi-cultural teams taking part in a business management simulation.
<input type="checkbox"/>	Modified time frame required.	Social life simulation where users can experience change in a city which is usually slow in real life. <a href="http://simcity.ea.com">http://simcity.ea.com</a>
<input type="checkbox"/>	Learning which requires role-playing and immersion within the environment and with others/ person-to-person which would not be possible in real life.	Students learning Spanish can visit the Cervantes Institute in Second Life and speak to native speakers and simulate being on the streets of Madrid, Spain. <a href="http://uvvy.com/index.php/Instituto_Cervantes_in_Second_Life">http://uvvy.com/index.php/Instituto_Cervantes_in_Second_Life</a>
<input type="checkbox"/>	When equipment still in prototype form and/or too expensive for hands-on practice. (Save money, minimize risks)	<ul style="list-style-type: none"> <li>a. New computer software application still under construction.</li> <li>b. High tech, very expensive equipment – will be damaged if used improperly</li> </ul>

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When is it not appropriate to use a simulation? If the instructional/training issue meets one or more of the following criteria, a simulation may not be appropriate.

<input checked="" type="checkbox"/>	Criteria	Examples
<input type="checkbox"/>	When tactile touch is required.	Nursing students learning how to check someone's pulse.
<input type="checkbox"/>	When designing just-in-time training or small audience – type of learning is related to fact or concept, face time with a manager is required.	Company is rolling out a new product in response to increased market competition. The audience consists of five sales reps and the sales manager will conduct the training.
<input type="checkbox"/>	When the instruction/training need consists of a simple process or procedure.	Training on customer service standards such as the greeting to use when answering the phone.
<input type="checkbox"/>	When information or procedures are constantly changing	A company has established a wiki to encourage information sharing among employees. The wiki content and format is dynamic and can change daily.
<input type="checkbox"/>	When the cost of building the simulation outweighs the benefits.	Limited budget for instruction.
<input type="checkbox"/>	When you are delivering a specific message to all learners and there is little lead time	Synchronous collaboration is needed. A systems problem has been identified and an immediate fix developed. All users must have the information by close of business next Friday.