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The following were results were provided on **12/21/2011** at **1:6:47 PM**:

**Tutorial ID:** 1113

**Tutorial Title:** The Science of Learning - Why Games Work

**Tutorial Outline:** Part 1 – Introduction  
1.1 Contents of Talk  
1.2 Learning Objectives  
1.3 Background & Damage Control Trainer  
1.4 Demo  
Part 2 – Flow  
2.1 Explain Flow  
2.2 Benefits of Flow  
2.3 Requirements of Flow  
Part 3 – Motivation  
3.1 How Motivation Affects Learning  
3.2 Intrinsic vs Extrinsic  
Part 4 – Simplicity  
4.1 Keep It Simple  
4.2 Paradox of Choice  
4.3 Opportunity Cost  
4.4 Authenticity (Representative vs Realistic)  
4.5 Cut Scenes  
4.6 Individual vs Team  
Part 5 – Content  
5.1 The Two Perspectives  
5.2 Elemental Quintet  
5.3 Content as Game Rules  
5.4 Game Play vs Instruction  
Part 6 – Learning Theory  
6.1 Feedback  
6.2 Repetition & Failure  
6.3 Difficulty & Scaffolding  
6.4 Reflection  
Part 7 – Conclusion  
7.1 Challenge, Mastery, Flow  
7.2 What are Games Good For?  
7.3 Art and Science  
7.4 Final Thoughts

**Learning Objectives:**

1. Describe the theory of flow, how it impacts learning, and how flow works in game
2. Explain how motivation affects learning and compare intrinsic vs extrinsic
3. List instructional techniques such as repetition, feedback, reflection and scaff
4. Describe how paradox of choice and opportunity cost impacts

motivation & flow.

**Audience intended for tutorial:** This tutorial is for anyone designing, working with, or using games to improve training. It is intended for practitioners of instruction, designers of games, project managers, and decision makers. It presents techniques that can help reduce the total time

**Pre-requisites needed to attend:** To gain maximum benefit, the attendee need only have an interest in using learning games to improve training.

**Tutorial Abstract:** In order to prepare for the future, we need training that is more cost effective. The forces are telling us they want soldiers to learn more, in less time. It's a challenging request, to be sure. Fortunately, there have been recent advances in learning theory and game design that may just make this possible. Modern research shows that well designed learning games have the potential to significantly improve both knowledge and behavior, in much less time. However, just because it is possible, doesn't mean it's easy.

This tutorial explores the art and science of both instruction and games. It explains why games work and why games make excellent tools for teaching. It explores fundamental theories of psychology, learning, and motivation and shows how to use them. It explains how games create a powerful experience called flow, and how that increases motivation and improves learning outcomes. It presents the theories that make games work and the practical techniques that can lead to effective training games.

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**Biography:**

Curtiss Murphy is a Project Engineer at Alion Science and Technology. He manages the game-based training and 3D visualization development efforts for the Norfolk based AMSTO Operation of Alion. He is responsible for the serious game efforts for a variety of commercial, Marine, Navy, and Joint DoD customers. He is an author and frequent speaker at conferences and leads the game development team that created the award winning Damage Control Trainer. He has been developing and managing software projects for 19 years and currently works in Norfolk, VA. Curtiss holds a BS in Computer Science from Virginia Polytechnic University.

**Clearance Form Received?:** Yes

**Status:** APPROVED

**I/ITSEC TUTORIAL SCORING FORM****Tutorial Reference ID:** 1113**Tutorial Title:** The Science of Learning - Why Games Work**Primary Author:** Murphy**Reviewer:** \_\_\_\_\_

Approve	Reject	Discuss
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <b>Reject, It's a Sales Pitch!</b>		
<input type="checkbox"/> <b>Author Was Invited</b>		

**Tutorials**

As part of the drive toward ever increasing professionalism in Training & Education and Modeling & Simulation (M & S), I/ITSEC offers tutorials available at the conference for Continuing Education Units (CEU).

I/ITSEC tutorials are designed to serve a variety of purposes, which include:

- a. Provide educational material for those preparing for certification as a M&S Professional (CMSP)
- b. Provide educational material for those who design and/or develop instructional modules or courses, in any learning/performance environment (live, virtual, or constructive)
- c. Serve as a refresher and more advanced learning opportunity for those seeking to maintain their certification and/or knowledge and skill set as it relates to Training & Education and Modeling & Simulation
- d. Bring topics of special interest at the cutting edge of Training & Education and Modeling & Simulation to the attendees at I/ITSEC.

**Evaluation**

1. Does the tutorial align with the purposes outlined above? **Yes No Somewhat**  
If not, what can improve the alignment?

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2. Did the author provide a clear description of the tutorial? **Yes No Not enough detail**  
If not, what can improve the description?

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3. Is the tutorial appropriate for:
  - Management Tracks?

Technical Tracks?

Both Tracks?

4. Does the author have the appropriate credentials to be teaching this material? **Yes No**

5. If this goes forward to the next stage, is there anything of which the author should be aware, cautioned against, and/or advised to include/exclude?

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**Additional Comments/Remarks**

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