Content development for successful e-learning environment

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Aspects of e-learning environments

- Learning object repositories
- Customized, adaptable learning
- PALS
- Learning management systems
- Content management systems
- Semantic web technologies for access of content
e-learning content is not meaningful when ...
e-learning content is not meaningful when ...

Too many focal points, frills.
Content distracts from learning.
Over-designed.
e-learning content is successful when it is based on:

• Sound pedagogy
• Good design principles
• Strong dissemination efforts
ABOUT PROJECT OSCAR
ANIMATION REPOSITORY
DEVELOPMENT TOOL KIT
PLUG IN
README (USAGE/INSTALLATIONS)

TOP ANIMATIONS

http://oscar.iitb.ac.in
Students interact with the simulation and devise patterns in images formed by spherical lenses.
Pedagogical principles

Constructivism

Individuals build their knowledge by creating a response to the information they receive and making connections to existing knowledge. This knowledge is used to create a response to the information they receive from the environment.
Pedagogical principles

Interactive engagement

Station 1
Station 2
Station 3
Station 2

IDLE
TRANSMIT
CARRIER-SENSE
BACK-OFF

AddStation: 40
Stop
Clear
FrameSize: 50
Pedagogical principles

Interactive engagement

Instructional methods “designed to promote conceptual understanding through heads-on (always) and hands-on (usually) activities.” (Hake, 1998)

Multiple representations
Pedagogical principles

Multiple representations

Depicting physical processes using visualizations, representing scientific information with diagrams, equations, text; visual and spatial thinking.
Pedagogical principles

- Constructivism
- Interactive engagement
- Multiple representation
Design principles

Modularity

Separate choices and animations for different kinds of lenses, instead of combining all lenses in a single animation.
Design principles

Modularity

Content is presented in segments of length that a typical user can pay attention to, instead of a long continuous unit.
Design principles

Coherence

Newton's first law of motion:
Every body continues to be in a state of rest or
move with uniform velocity unless a resultant
force acts on it.

This property is called INERTIA.

I hear and I forget, I see and I remember, I do and I understand.
Design principles

Coherence

Users’ attention is focused on the main concept by eliminating irrelevant content
Design principles

Consistency
Design principles

Consistency

Unified visual theme in an animation, and across different animations helps users make correct interpretations of the material.

Choice of color -- differentiate information types
Controls -- separate area than visual animated area
Design principles

• Modularity

• Coherence

• Consistency
Dissemination
Dissemination

- Open-source resources
- Released under Creative Commons
- Translated into Indian languages
- Students, teachers, content experts, programmers and YOU have an opportunity to participate in creating new animations
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