

## MULTIMEDIA APPLICATIONS FOR TEACHING -LEARNING

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### **Abstract :**

*“ People learn better when multimedia messages are designed in ways that are consistent with how the human mind works.”*

*The new Economy, whether described as the information economy, digital economy, or knowledge economy, has produce significant changes in educational institute and teaching learning process. It is important to understand what it takes for technology to improve learning. In developing the plan of teaching learning process, the multimedia application is essential for learning.*

*This paper is focus on theoretical part like Concept of multimedia, Need of multimedia, Views of Multimedia, Approaches to Multimedia Design, Metaphors of Multimedia & Learning, Research-Based Principles for the Design of Messages & Multimedia Channel of multimedia etc. & approach of multimedia application in teaching learning process.*

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**Key words:** - Multimedia, Application, Teaching, Learning.

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### **Introduction :**

The new Economy, whether described as the information economy, digital economy, or knowledge economy, has produce significant changes in educational institute and teaching learning process. It is important to understand what it takes for technology to improve learning. In developing the plan of teaching learning process, the multimedia application is essential for learning.

Techno-pedagogy is a key deciding factor in whether an educational media product is successful or not. 'Pedagogy' refers to the *art-science* of teaching 'techno'

refers to the *art-skill* in handcrafting Here, 'techno' is a qualifier; it intersects or crosses the meaning of 'pedagogy' with its own. Techno-pedagogy refers to weaving the techniques of the craft of teaching into the learning environment itself.

This paper is focus on theoretical part of multimedia & approach of multimedia application in teaching learning process, because “People learn better when multimedia messages are designed in ways that are consistent with how the human mind works”

### **Concept of multimedia :**

“ The combined use of media for education or entertainment.”

### **Combination :**

1. Text.
2. Graphics / pictures/ image etc.
3. Audio/video
4. Animation & virtual reality.

### **Need of multimedia :**

- ▶ To demonstrate abstract concept.
- ▶ Students are to engage in learning process.
- ▶ For activity based learning.
- ▶ Acquire to information with entertainment.

To enable the student for manipulate, create interactive material for knowledge creation.

### **Views of Multimedia :**

<b>Views of Multimedia</b>		
<b>View</b>	<b>Definition_____</b>	<b>Example_____</b>
<b>Delivery media</b>	<b>Two or more delivery devices</b>	<b>Computer screen and amplified speakers</b>
<b>Presentation modes</b>	<b>Verbal and pictorial representations</b>	<b>On-screen text and animation</b>
<b>Sensory modalities</b>	<b>Auditory and visual animation</b>	<b>Narration senses and animation</b>

### Approaches to Multimedia Design :

Two Approaches to Multimedia & Multimedia Design			
Approach	Starting point	Goal	Issues
Technology-centered	Capabilities of multimedia technology	Provide access to information	How can we use cutting edge technology in designing multimedia presentations?
Learner-centered	How the human mind works	Aid to human cognition	How can we adapt multimedia technology to aid human cognition?

### Metaphors of Multimedia & Learning:-

Two Metaphors of Multimedia & Learning				
Metaphor	Definition	Learner	Teacher	Goal of Media
Information acquisition	Adding information to memory	Passive information receiver	Information provider	Deliver information, act as delivery vehicle
Knowledge construction	Building a coherent mental structure	Active sense maker	Cognitive guide	Provide cognitive guidance, act as helpful communicator

### Goals of Multimedia & Learning:-

Two Goals of Multimedia & Learning			
Goal	Definition	Test	Example test item
Remembering	Ability to reproduce or recognize presented material	Retention	Write down all you can remember from the passage you just read.
Understanding	Ability to use presented material in novel situations	Transfer	List some ways to improve the reliability of the device you just read about.

### Assumptions of a Cognitive Theory of Multimedia & Learning:-

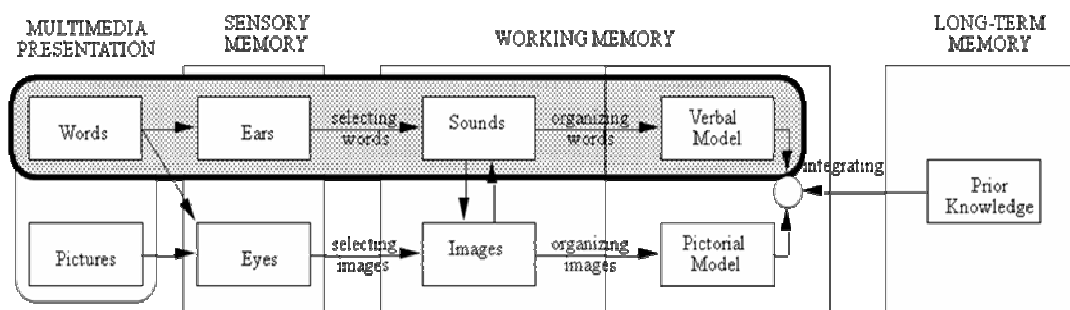
Three Assumptions of a Cognitive Theory of Multimedia & Learning	
Assumption	Description
Dual channels visual and auditory information.	Humans possess separate channels for processing visual and auditory information.
Limited capacity	Humans are limited in the amount of information that they can process in each channel at one time.
Active	Humans engage in active learning by attending to processing relevant incoming information, organizing selected information into coherent mental representations, and integrating mental representations with other knowledge.

### Kinds of Multimedia & Learning Outcomes:-

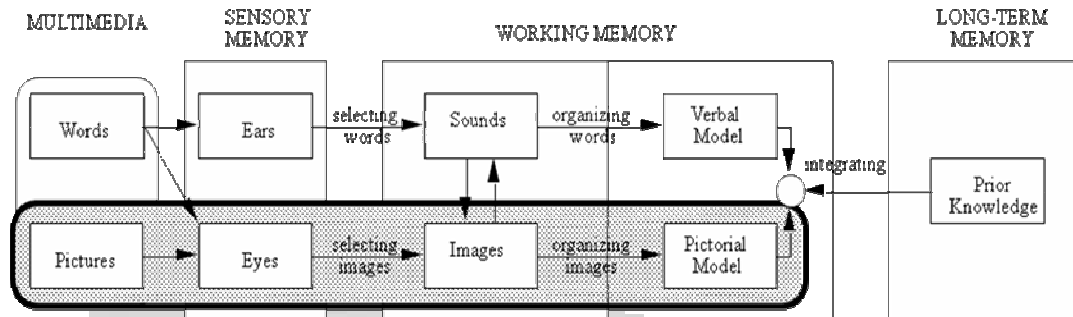
Three Kinds of Multimedia & Learning Outcomes			
Learning outcome	Cognitive description	Retention test score	Transfer test score
No learning	No knowledge	Poor	Poor
Rote learning	Fragmented knowledge	Good	Poor
Meaningful learning	Integrated knowledge	Good	Good

### Channel of multimedia :

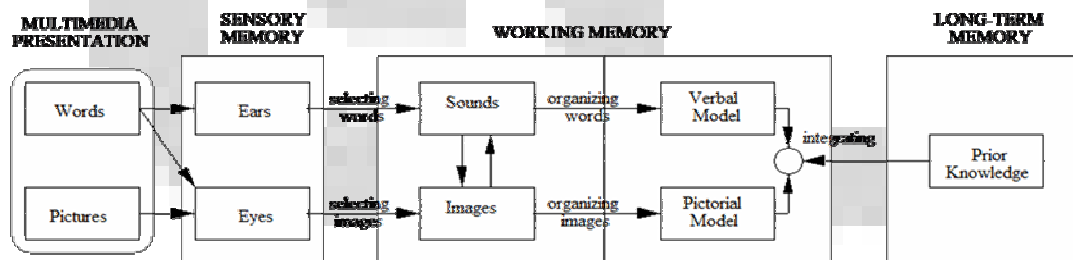
#### Auditory Verbal Channel Highlighted



## Visual/Pictorial Channel Highlighted



## A Cognitive Theory of Multimedia Learning



### Research-Based Principles for the Design of Messages & Multimedia:-

- Multimedia principle: People learn better from words and pictures than from words alone.
- Spatial contiguity principle: People learn better when corresponding words and pictures are presented near rather than far from each other on the page or screen.
- Temporal contiguity principle: People learn better when corresponding words and pictures are presented simultaneously rather than successively
- Coherence principle: People learn better when extraneous words, pictures, and sounds are excluded rather than included.
- Modality principle: People learn better from animation and narration than from animation and on-screen text.
- Redundancy principle: People learn better from animation and narration than from animation, narration, and on on-screen text.

**Conclusions about the Multimedia & Learning:-**

1. Theory-based. The design of messages should be based on a theory of how the human mind works.
2. Research-based. The design of messages should be based on research findings.

**Bottom line :**

**People learn better when messages are designed in ways that are consistent with how the human mind works and with research-based principles.**

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