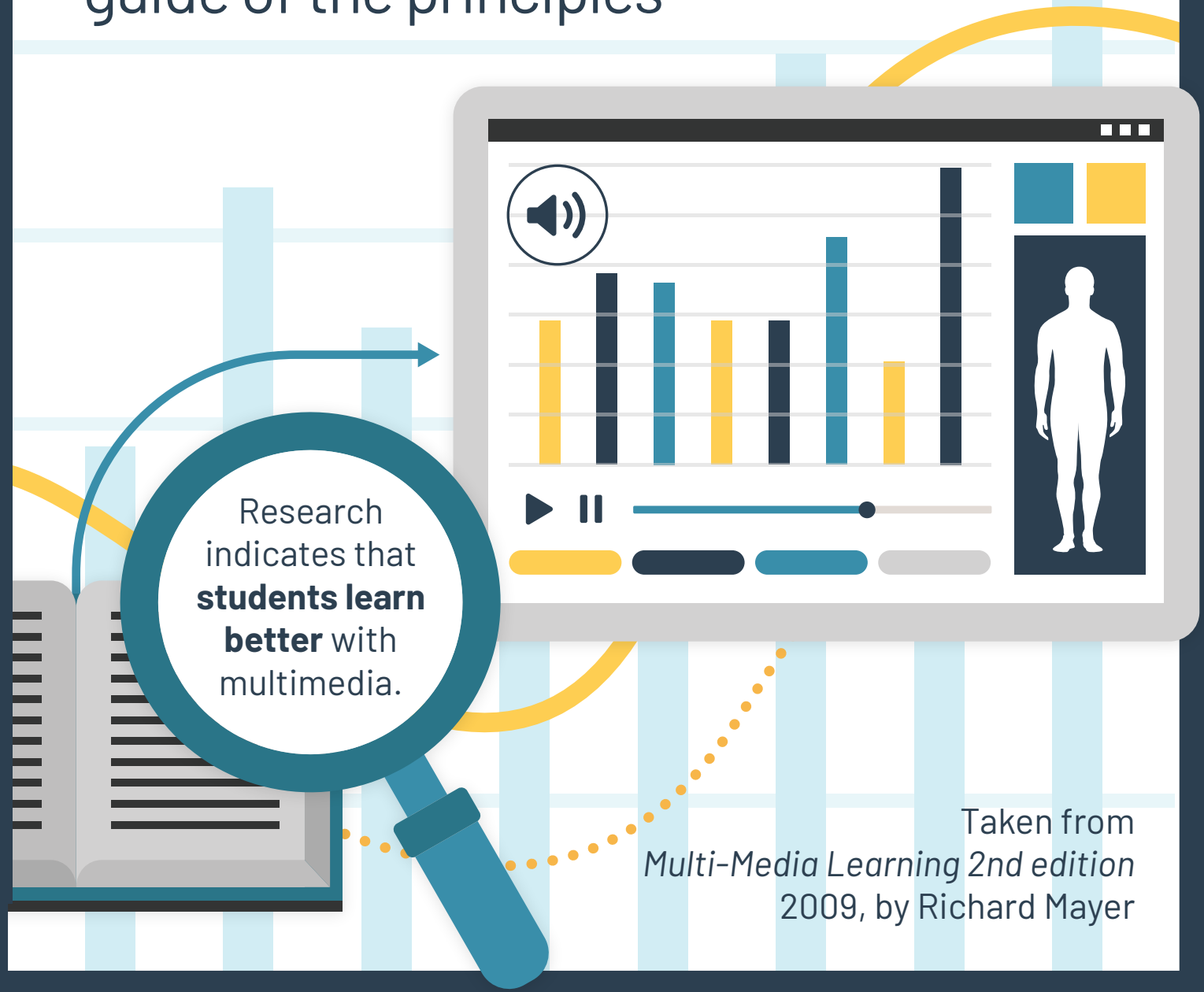
# 12 PRINCIPLES OF MULTIMEDIA LEARNING

A quick reference guide of the principles




Taken from
*Multi-Media Learning 2nd edition*
2009, by Richard Mayer

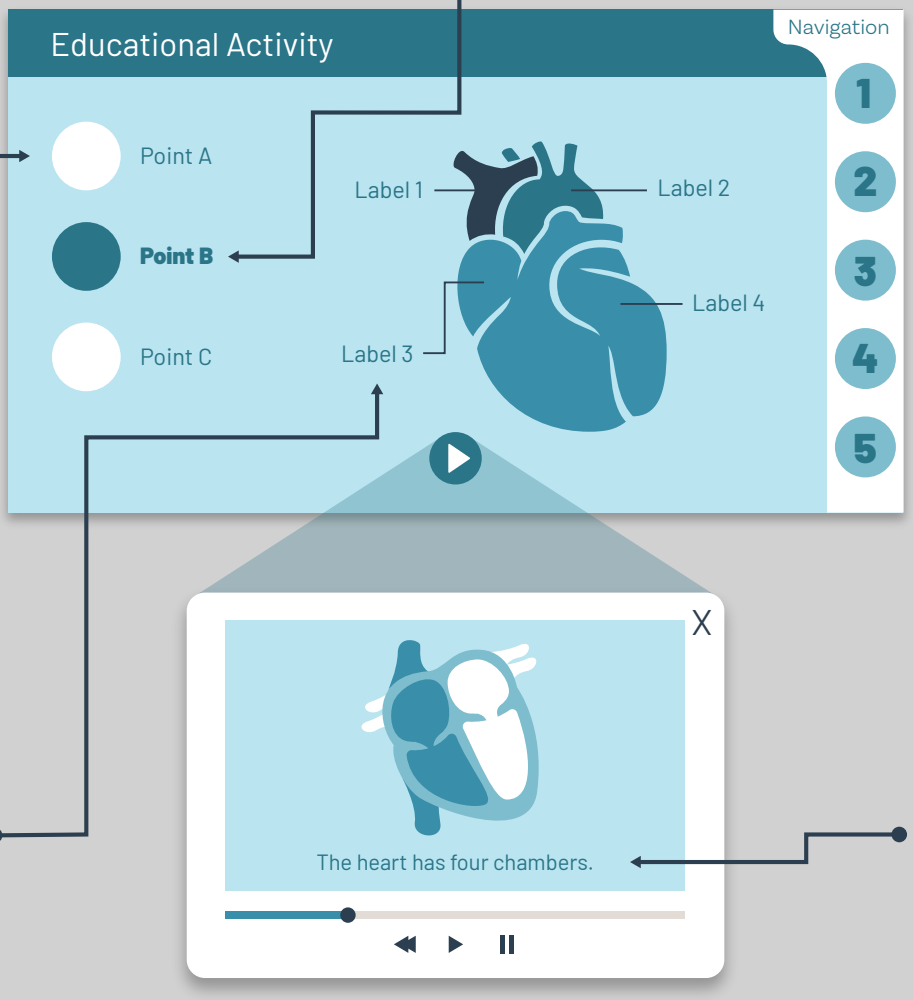
There are **three main goals** in the design of multimedia instruction:

## Principles for Reducing Extraneous Processing

### 1. Coherence
Simplify content as much as possible

### 2. Signaling
Highlight key words with a bold font, color, or size

### 3. Redundancy
Avoid repeating the same content in different ways



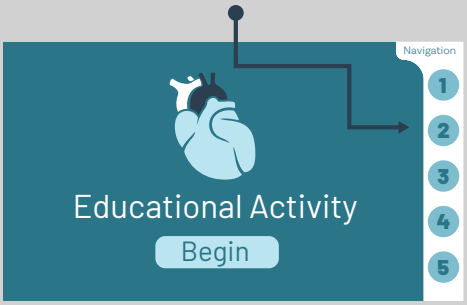

### 4. Spatial Contiguity
Place text in close proximity to the item it is describing

### 5. Temporal Contiguity
Text or narration should appear in time with animations

# Principles for Managing Essential Processing

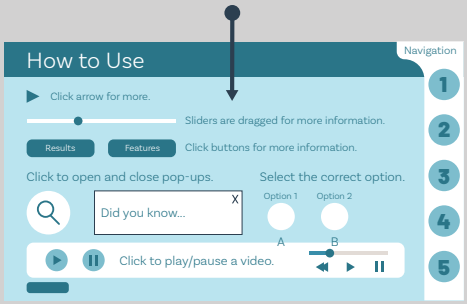
## 6. Segmenting

Present the material in parts



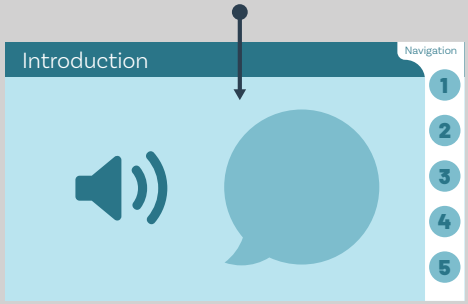

## 7. Pre-training

Explain basic information before going in-depth




## 8. Modality

Use spoken words instead of printed words



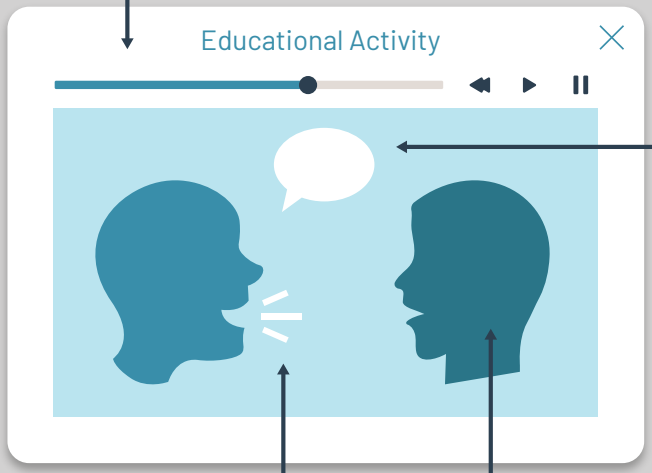

# Principles for Fostering Generative Processing

## 9. Multimedia

use words and pictures rather than words alone

## 10. Personalization

Using words in conversational style rather than formal style




## 11. Voice

Speaking in a friendly human voice is better than a machine voice

## 12. Image

Use instructor image/avatars sparingly for optimal impact

Whether you are designing live or online educational courses, you may need to reconsider how you will get students to engage with the material. In the book Multimedia Learning (Cambridge Press, 2001), Richard E. Mayer discusses twelve principles that shape the design and organization of multimedia presentations:

1. **Coherence Principle** – People learn better when extraneous words, pictures and sounds are excluded rather than included.

2. **Signaling Principle** – People learn better when cues that highlight the organization of the essential material are added.

3. **Redundancy Principle** – People learn better from graphics and narration than from graphics, narration, and printed text.

4. **Spatial Contiguity Principle** – Students learn better when corresponding words and pictures are presented near rather than far from each other on the page or screen.

5. **Temporal Contiguity Principle** – Students learn better when corresponding words and pictures are presented simultaneously rather than successively.

6. **Segmenting Principle** – People learn better when a multimedia message is presented in user-paced segments rather than as a continuous unit.

7. **Pre-training Principle** – People learn more deeply from a multimedia message when they know the names and characteristics of the main concepts.

8. **Modality Principle** – People learn more deeply from pictures and spoken words rather than from pictures and printed words.

9. **Multimedia Principle** – People learn better from words and pictures than from words alone.

10. **Personalization Principle** – People learn better from multimedia presentations when words are in conversational style rather than formal style.

11. **Voice Principle** – People learn better when the narration is spoken in a human voice rather than a machine voice.

12. **Image Principle** – People do not necessarily learn better from a multimedia lesson when the speaker's image is added to the screen.

Reference:
Mayer, Richard E. *Multi-Media Learning 2nd edition.*
Cambridge, England: Cambridge University Press, 2009. Print.