Engaging students with Classroom Technologies

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Classroom Technologies

• Evolution in technology

http://www.nieuwsbronnen.com/tenbunderen/middelbareschool.html
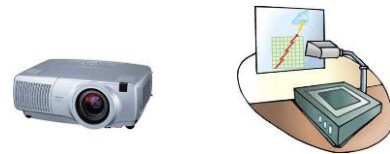
Basisschool de Wegwijzer, Elst

Classroom Technologies

• Technology in the educational setting of the classroom: *to support teaching*

• Often associated to more active learning

Classroom Technologies

• Data and document projectors

www.jdproductions.com.au

www.buzzle.com

Classroom Technologies

• Data and document projectors
• Tablet pc

med03401.blogspot.com

Classroom Technologies

• Data and document projectors
• Tablet pc
• Computer classrooms

Classroom Technologies

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- **Interactive whiteboards**

Classroom Technologies

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- **Lecture recording systems**

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- **Video conferencing systems / Skype**

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- **Audience response systems**

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Audio Tours

Audio Tours

Definition:

An individual tour through an educational site using digitally recorded files

Audio Tours

- Collection of audio tracks
- Each track refers to one topic of interest at the educational site
- Downloaded on personal multimedia device
  (most students have MP3 player and mobile phone)
- Students can visit site at own time and pace

Audio Tours

Types of Audio Tours
- Content
  - Informative tour: listening only
  - Activating tour: including assignments
- Media Used
  - Only audio
  - Audio and images/video

Audio Tours

Application in Medical Education

- Leiden Museum for Anatomy
  - Over 800 pathological and anatomical specimens
  - Specimens rarely used in education
  - Teachers have little time to provide live tours
  - Integrate the Museum into the curriculum to address basic sciences by developing an audio tour

Audio Tours

- Audio tours for courses like
  - "Respiration" (first year)
  - "Abdomen" (third year)
  - "Thorax" (third year)
- Museum open at scheduled times
- Referred to in other teaching activities

Audio Tours

How to create content?
- Specimens selected by teacher or course director

Audio Tours

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- Develop a script (explaining text) with each object

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- For a 60 minute museum session:
  – about 20 minutes of spoken text
  – about 10 to 15 specimens

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- Specimens selected by teacher or course director
- Develop a script (explaining text) with each object
- For a 60 minute museum session:
  – about 20 minutes of spoken text
  – about 10 to 15 specimens
- 20 minutes of spoken text takes about 2 hours of preparation (including recording)

Audio Tours

How to create files?
- Voice recorder with external microphone

Audio Tours

How to create files?
- Voice recorder with external microphone
- Sound editor software like Audacity® (open source)

Audio Tours

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Audio Tours

How to create files?
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- Quiet environment to avoid background noise
- Record the text on the digital voice recorder and finish it with software

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- Add pictures if desired

Audio Tours

How to create files?
- Voice recorder with external microphone
- Sound editor software like Audacity® (open source)
- Quiet environment to avoid background noise
- Record the text on the digital voice recorder and finish it with software
- Add pictures if desired
- Distribute files to students' own device

Audio Tours

Experiences
- Students and teachers satisfied
- Useful to study specimen and gain a better understanding of the topics
- Time efficient for teachers
- Reusable materials
- Easy to create

Practical point
- Professional narrator

Audio Tours

Twelve Tips checklist

Educational
1. Make sure the audio tour suits the learning goals of the course
2. Choose an appropriate format for the audio tour
3. Reflect on the audio tour in your lectures

Audio Tours

Twelve Tips checklist

Educational

1. Make sure the audio tour suits the learning goals of the course
2. Choose an appropriate format for the audio tour
3. Reflect on the audio tour in your lectures

Organizational

4. Decide on compulsory or noncompulsory character in an early stage
5. Inform the students in time

Audio Tours

Twelve Tips checklist

Technical

6. Use optimal recording equipment
7. Name and tag the MP3 files properly
8. Decide which download method suits your audience best

Audio Tours

Twelve Tips checklist

Technical

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Practical

9. Beware of good sound quality recordings
10. Consider the length of the audio tour and the amount of specimens
11. Provide clear instructions about the location of the specimens in the museum
12. Think carefully about the order of succession in the audio tour

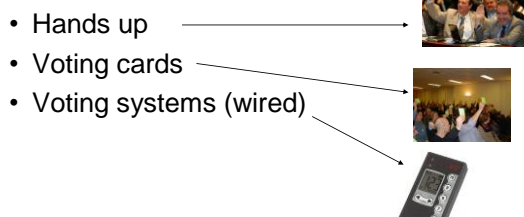# Audience Response Systems

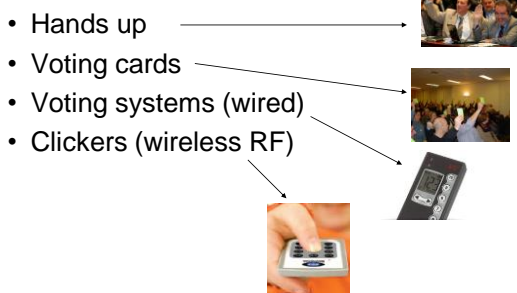# Audience Response Systems

- Hands up

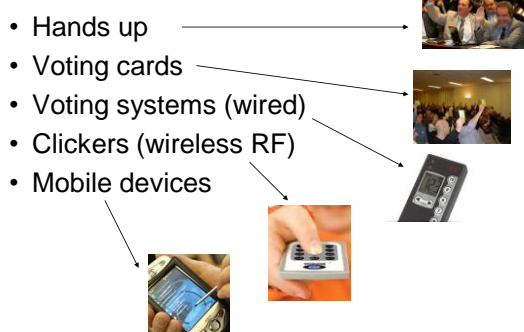# Audience Response Systems

- Hands up
- Voting cards

Audience Response Systems

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- Voting systems (wired)

Audience Response Systems

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- Clickers (wireless RF)

Audience Response Systems

- Hands up
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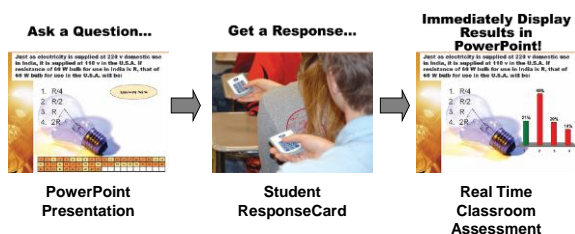- Clickers (wireless RF)
- Mobile devices

Audience Response Systems

Definition of the modern ARS
- Electronic polling
- Large groups of students
- Using transmitters
- Immediately results in graphic form on-screen
- Instant feedback by teacher

Audience Response Systems

PowerPoint Presentation

Student ResponseCard

Real Time Classroom Assessment

Audience Response Systems

- Widely used in education
- Anonymous for others in class
- Activates and motivates the learner
- Reveals what students (don't) know
- Reveals student's opinions

Audience Response Systems

Effects
- Students are less shy to react: overcome fear, less hard to admit a wrong answer and discuss it
- 2-way interaction
- Competition, use team assignment slides
- Increase attention span
- Improved learning experience
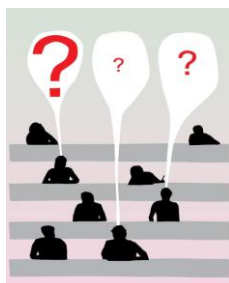- Possible increase of knowledge retention

Audience Response Systems

Scenarios for ARS in teaching
- Knowledge
- Knowledge transfer
- Lecture on demand
- Clinical skills
- Testing
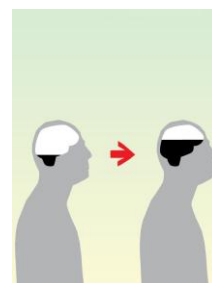- Session evaluation
- Opinions

Scenario: Knowledge

- Test before teaching
- Determine pre-level
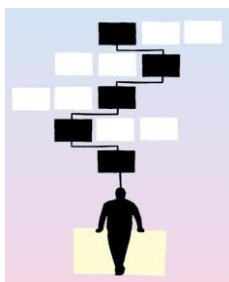- Adapt lecture if needed

Scenario: Knowledge transfer

- Test before and after teaching
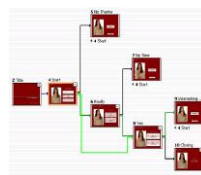- See increase of knowledge

Scenario: Lecture on demand

- Ask students which topic to explore
- Branching presentation
- Rehearsal lectures
- Adapt teaching
- Flexibility and preparation!

Scenario: Clinical Skills

- Interactive patient lecture
- Students choose next step
- Collectively treat a patient
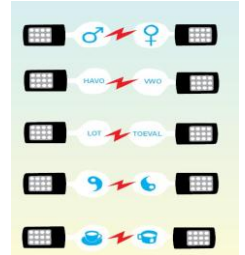- Engaging and impressive

Scenario: Testing

- Formal and informal testing
- Personalized devices
- No display of results
- Results in database
- Record of attendance
- Participants feel comfortable with ARS

Scenario: Session evaluation

- Conferences
- Anonymous evaluations
- Know your audience
- 5-point scale questions
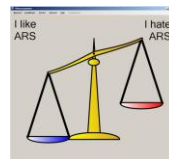- No results on the spot

Scenario: Opinions

- Ask for students opinions anonymously
- To provoke discussion about sensitive issues
- High response
- High reliability

Scenario: Opinions

- Ad hoc polling
  - Ask for opinion and discuss
- Continuous polling
  - Real time polling during a debate

Audience Response Systems

Practical points
- Before using ARS in your lecture, first determine your goals
- Depending on your goal, redesign your lecture
- Logistic issues
- Watch out for overkill !

Classroom Technologies

References:
- *Jong PGM de, Riedstra AW, Willems LNA, Bolk JH. Teaching Anatomy and Pathology using MP3 Audio Tours at the Leiden Museum for Anatomy and Pathology. JIAMSE 2010; 20(1):14-7*
- *Stevenson F. Clickers: the Use of Audience Response Questions to Enliven Lectures and Stimulate Teamwork. JIAMSE 2007; 17(2):106-111*
- *Doucet M, Vrins A, Harvey D. Effect of using an audience response system on learning environment, motivation and long-tern retention, during case-discussions in a large group of undergraduate veterinary clinical pharmacology students. Medical Teacher 2009; 31:e570-e579*
- *Kay RH, LeSage A. Examining the benefits and challenges of using audience response systems: A review of the literature. Computers & Education 2009; 53:819-827*

Classroom Technologies

Time for Questions

Or email me afterwards on
p.g.m.de_jong@lumc.nl

IAMSE *Medical Educator Fellowship*

We encourage those who have completed the Essential Skills in Medical Education (ESME) course to take note of a program offered by the International Association of Medical Science Educators (IAMSE) – the IAMSE Medical Educator Fellowship Program. Full information on the Fellowship is available on the IAMSE website at http://iamse.org/fellowship.htm.

Enrollment is through the 2011 annual meeting's registration form. There will be two required workshops at the St. Petersburg meeting, one 2-hour module on 6.18.11 from 4:00-6:00pm and a 1-hour module on 6.21.11 from 7:00-8:00am.

Please keep the dates and times in mind when booking your travel.