Practice until you can Preach it
The use of Sensor-based learning support

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Sensor-based Learning Support

• What is a Sensor?
• In a very general “sense”, sensors are components that measure certain values and properties.
• For example:
  – Movement
  – Temperature
  – Coordinates
  – Sound
  – Light
Sensor-based Learning Support
Definition

• Subject that studies how sensors can be used to support learning.
Why Sensor-based Learning Support?

• Current educational systems.

• One Tutor for too many students.
Why Sensor-based Learning Support?

• Work overload for teachers.

• Personalized Feedback through more human workforce NOT feasible.
Why Sensor-based Learning Support?

Sensors

Learner’s Environment

Learner’s Performance

Learner’s Physiological State
Why Sensor-based Learning Support?

Sensors

Action → Feedback → Reaction → Modifier

Personalized Instruction
Specific Sensors for Learning

• Specific sensors for learning
Specific Learning Applications for sensors

All proof of concepts
Research Plan

– Instead of going Broad
– Go Deep
Research Plan

- Sensor-based learning support for Public Speaking
Why Public speaking?

– Public speaking skills are relevant in many professions
– Requires practice and feedback.
– Courses in public speaking are fairly expensive and short.
Why Public speaking?

– Developing public speaking skills is a complex task.
  • Requires divided attention

– Metalogue Project is a Sponsor
Research Plan

- Technical
- Theoretical and Educational
Technical Studies

• No Manual
  – How to use Sensors
  – Type of Feedback
• Iterative design-based research approach
  – Design
  – Develop
  – Test Prototypes
Feedback Brainstorm

• Brainstorm about effective ways to give feedback about:
  – Body Posture
  – Hand Gestures
  – Use of Voice
  – Speaking Time and Pauses
Presentation Trainer Prototype
Conclusion
Theoretical and Educational Plan

• Expert Study
• Assessment Study
• Learning Effects
Comments and questions
Expert Study

How to assess nonverbal communication?

Which factors are relevant?

Are there nonverbal best practices?

Can nonverbal communication be used for troubleshooting?
Assessment Study

• Objective
  – Investigate how to use sensors for assessment
Learning Effects Study

- **Objective**
  - Study the learning effects of Sensor-based support for public speaking