Interactive Media Design

Research Meeting

December 10, 2013

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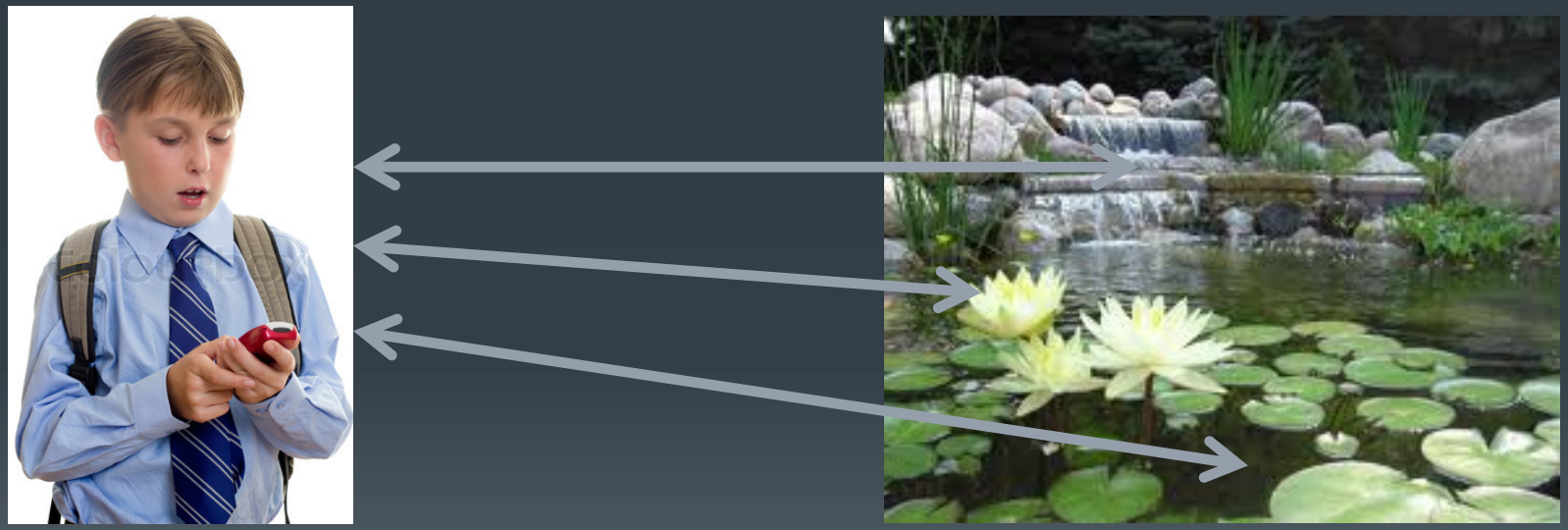
Overview

- In mobile learning, a user approaches a real object and learns about it. We want to investigate this interaction with AR.



Multiple interactions with multiple objects; physical environment is interactive

Multiple Research Questions

- **Retention:** Do people remember better with AR?
- **Transfer:** Do people learn better with AR?
- **Usability:** Is the application usable for learning purpose?
- **Stealth Assessment Method:** How can we predict the student performance based on the interaction log?
- **Stealth Usability Method:** How can we predict the usability score based on the interaction log?

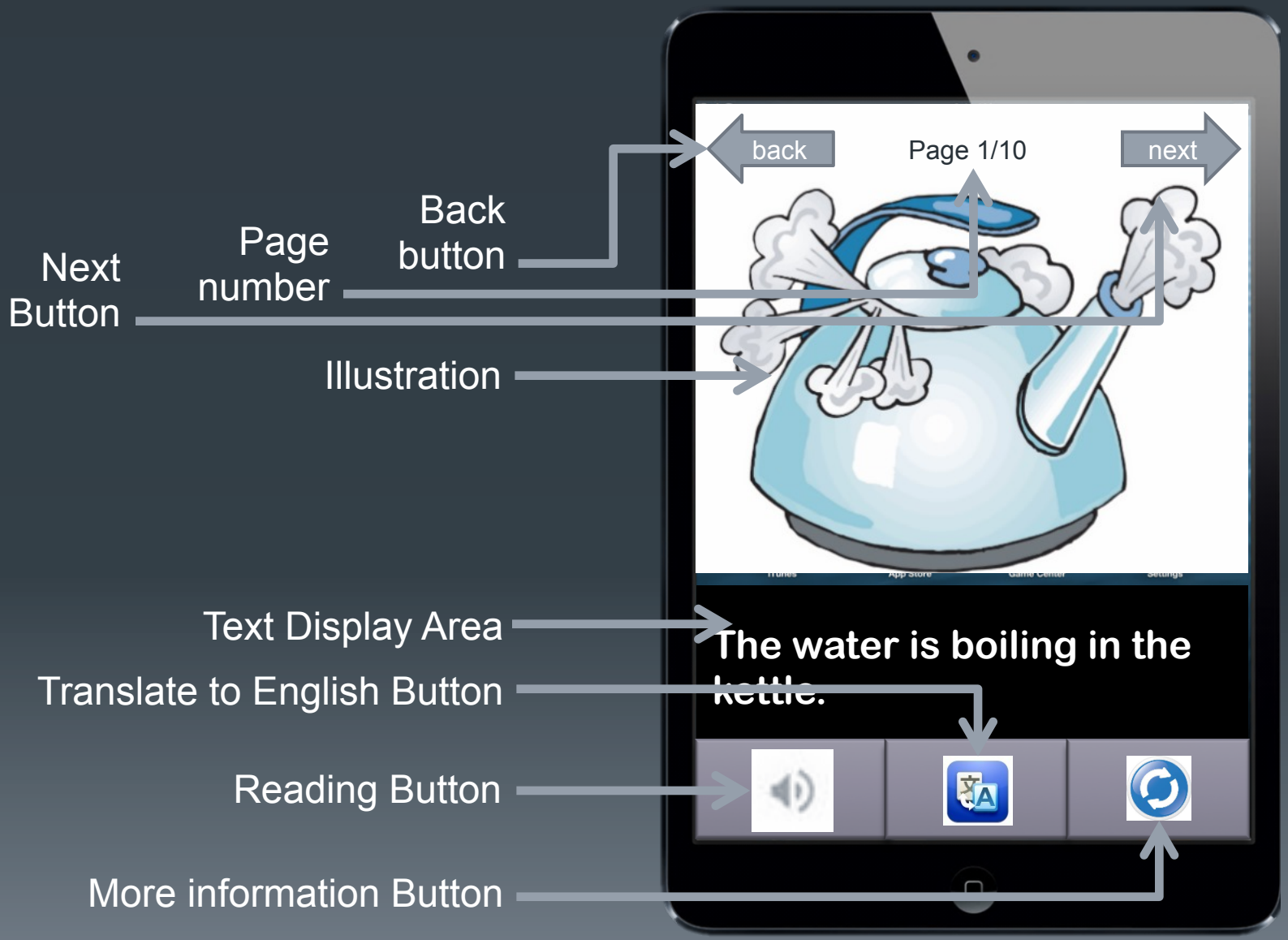
Requirements Overview

	Collect Content	Develop the Application	Log Data	Evaluation
In-charge:	Marc	Arno	Arno	Marc
Items:	Texts	Augmented reality on iPad	Timestamp	Retention quiz
	Animated gifs	Handle multiple markers	Detected markers	Transfer quiz
	Sound files	Functions for controls	Button push	Usability questionnaire
	Target objects	Title page	Accelerometer	User studies
	10 Markers	User registration page	Gyroscope	

AR View


Animated Gif
Target Object
AR Label
AR Marker
Text Display Area
Translate to English Button
Reading Button
More information Button
Das Wasser kocht im Kessel.
1
The water is boiling in the kettle.

Multimedia Version



3 Versions of the same app

Experiment:
Learning with AR

Control 1:
Multimedia Version

Control 2:
Bad AR application

Test Scenario

Language learning: Learn German verbs related to cooking in a kitchen environment. There will be 10 markers attached to kitchen objects. Maximum of 3 people at a time.

Evaluation

- Recall Test

  Which of these words do you remember seeing?

  Water, kettle, egg, pasta, drain, boil, cut, chop, dice, serve, salt, spoon, carrot, pot, lid, cat, dog…

- Transfer Test

  10 item quiz, multiple choice, “reading a recipe” or “reading a menu”

- Usability Questionnaire

  26 questions on usability

Schedule

- December
  - Requirements
  - Collect content elements
  - Begin development
- January
  - Development
  - Pilot test with NAIST students
- February
  - Pilot test with NAIST students
  - Show a video demonstration to teachers (Philippines)
- March
  - Analysis of test with NAIST students
  - Adjustments based on the pilot test and teacher's input
- April
  - Pilot tests with students (Philippines)