Kyoto University Design School 2014 Summer-term FBL/PBL

Foreign Language Education++

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① Problem and Objectives

We propose that a problem of English education in Japan is the **insufficiency of English communication**.

Our goal is to improve real time communication in a second language (L2). This is a problem in Japanese education, as the focus is on reading and grammar rather than listening and speaking. We aim to **improve English speaking and listening skills of Japanese school students**.

From discussions, we defined the following **design requirements** for our solution:

- Provide opportunity for speaking
- Help with motivation
- Usable in a classroom
- Compatible with technology
- Can accommodate and reduce burden for teachers

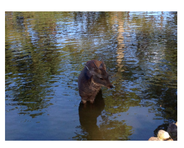
② Karuta

Karuta (カルタ) is a Japanese game, where players select the correct card from a set according to what is said by a teacher. Karuta can be used to teach many things, but in this case we **use it to teach English**.

The deer is eating grass.

The deer is sitting on the ground and looking at us.

A group of deer are looking at some people.



A deer is wading in a lake.

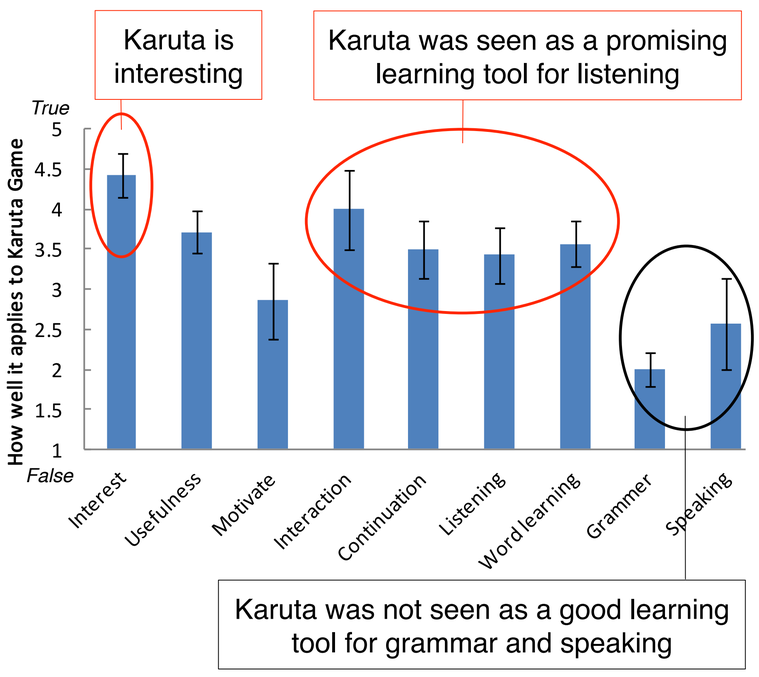
Why Karuta?

- Culturally grounded language acquisition tool in Japan (e.g. 百人一首)
- Easy to understand
- Promotes image based / L2 based thinking
- As a game it raises motivation
- Based on oral communication
- Can stimulate discussions
- Can be used in class repeatedly
- Can be integrated with technology

We can improve the Karuta game by **introducing technology**. First, we have to understand how people **evaluate Karuta as a language learning tool**.

③ Preliminary Karuta Experiment

We performed a preliminary experiment of English Karuta using simple cards. At the end of the game the participants gave us feedback about the **strengths and weaknesses of Karuta as a language learning tool**.



We found that Karuta **motivated** people **to learn and to provoke a semantic image** of an English expression, but was **not good** as a learning tool **for grammar and speaking**.

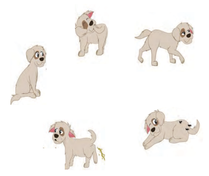
We **need to improve Karuta** by addressing these points. Improvements can be made by introducing technology and modifying the game to make it more applicable to language learning.

④ Improving Karuta

Incremental Karuta can help with grammar by structuring the English sentences. Its features are:

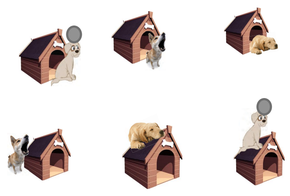
- A set of sentences, whose structure becomes complex incrementally
- Helps students to continuously add extra information while speaking
- Provides more variety and difficulty to be more absorbing and stimulating

Stage 1: Simple action
A dog is pooping.



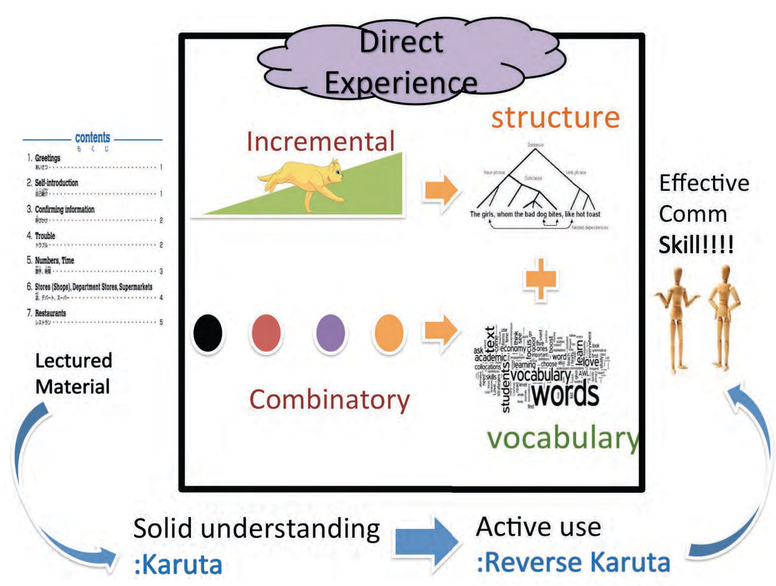
Stage 2: +Location
A dog is sitting in front of a dog house.

Stage 3: +Descriptive action
A dog is lying before his house, napping.



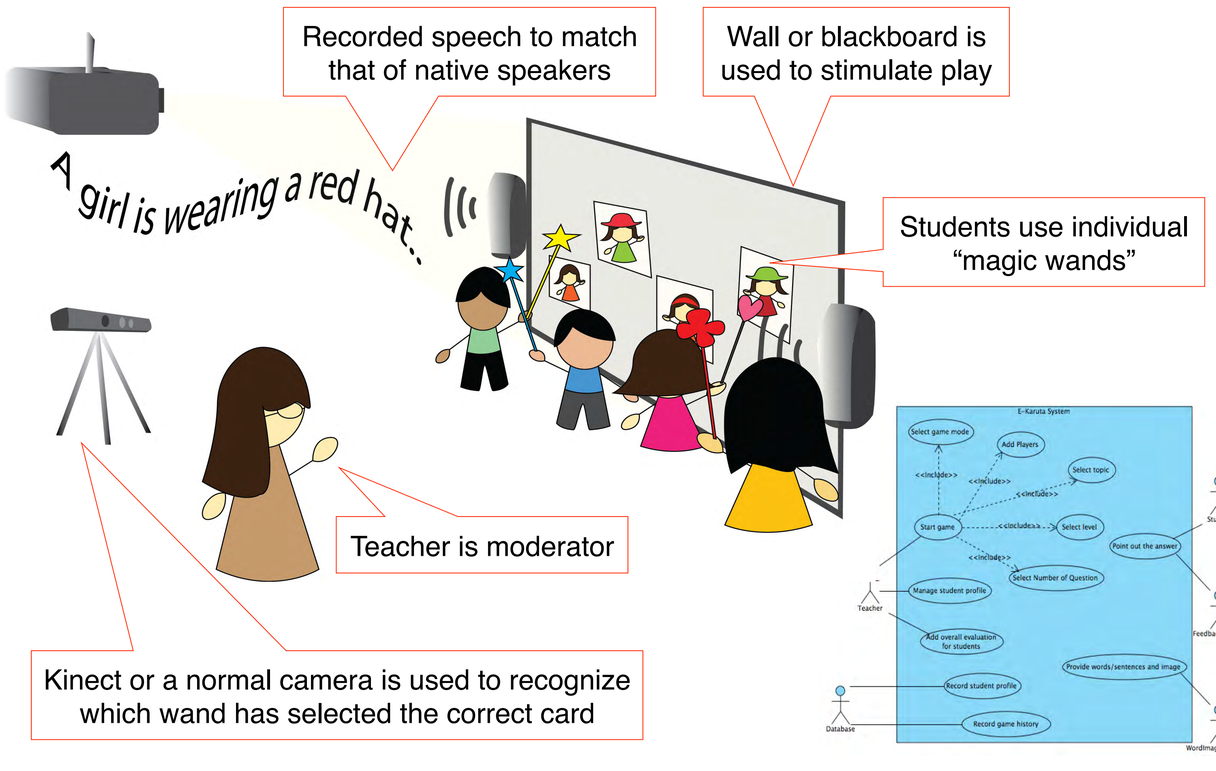
Stage 4: +Temporal expr.
A dog is sitting in front of his house, barking at a stranger on a starry night.

Reverse Karuta can be played, where the user instead chooses a card and another person describes it.



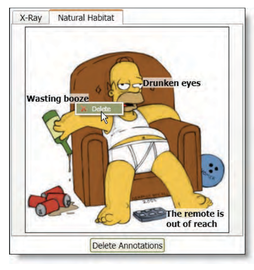
⑤ Proposed Design of eKaruta

eKaruta (electronic Karuta) can be realized with **off-the-shelf equipment** that is already available in classrooms.



⑥ Technological Implementation

Card generation is the process of automatically creating cards for the Karuta game.



Input: Theme, seed, difficulty, history
Output: Set of cards

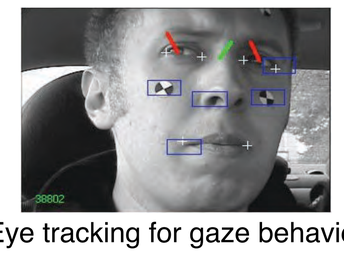
Designing card graphics:

- Annotated image acquisition (manually label cards for use)
- Image generation (program can automatically create images)

Other technologies:

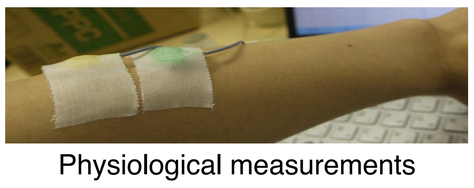
Intelligent touch surfaces

Learning in a virtual world



Eye tracking for gaze behavior

Facial feature tracking for participant moods



Physiological measurements