AmbiLearn: an ambient intelligent multimodal learning environment for children

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1. Introduction

· The focus of this research is to investigate the use of multimodal communication supporting collaborative learning for children.
· The overall objective is the design and development of AmbiLearn, a multimodal system and ubiquitous learning environment for children.
· Background research focuses on learning environments, multimodal interfaces and computer games for learning (Fig. 1).

2. AmbiLearn

· Multimodal input – fused/represented semantically to obtain user intentions.
· Decision making – based upon intentions and application state (represented by domain and pedagogical models).
· Domain model – plug in knowledge base for different domains.
· Pedagogical model – plug in pedagogical knowledge module.

3. TreasureLearn application

· The educational advantage of AmbiLearn is demonstrated by a treasure hunt style game (TreasureLearn).
· TreasureLearn contains the core mechanisms which generates the game play, defines the game challenges and associated actions.

4. Interface design

· AmbiLearn and cloud computing?
- Use of cloud computing enables AmbiLearn to become device independent.
- Processing and storage are all contained within the cloud – overcoming device limitations.
- Interface will be developed using ASP.NET and Silverlight 4.

5. AmbiLearn and cloud computing?

· AmbiLearn will address the interface design and usability of a multimodal system for children’s education.
· Addressing the role of serious games in education, TreasureLearn investigates whether an educational game integrated with elements of a virtual learning environment can have a positive impact on children’s education at primary level.

7. References


