Game research for training and entertainment

Knowledge Transfer

Over the past three years researchers at Utrecht University, TNO, University of Twente, and Delft University of Technology developed new technology, algorithms, and design methodology for the games of the future. Results include sketching techniques for the creation of consistent virtual worlds, new algorithms for animation and crowd simulation, artificial intelligence that can explain its reasoning, interaction techniques based on brain activity, and methodology for the design of effective serious games.

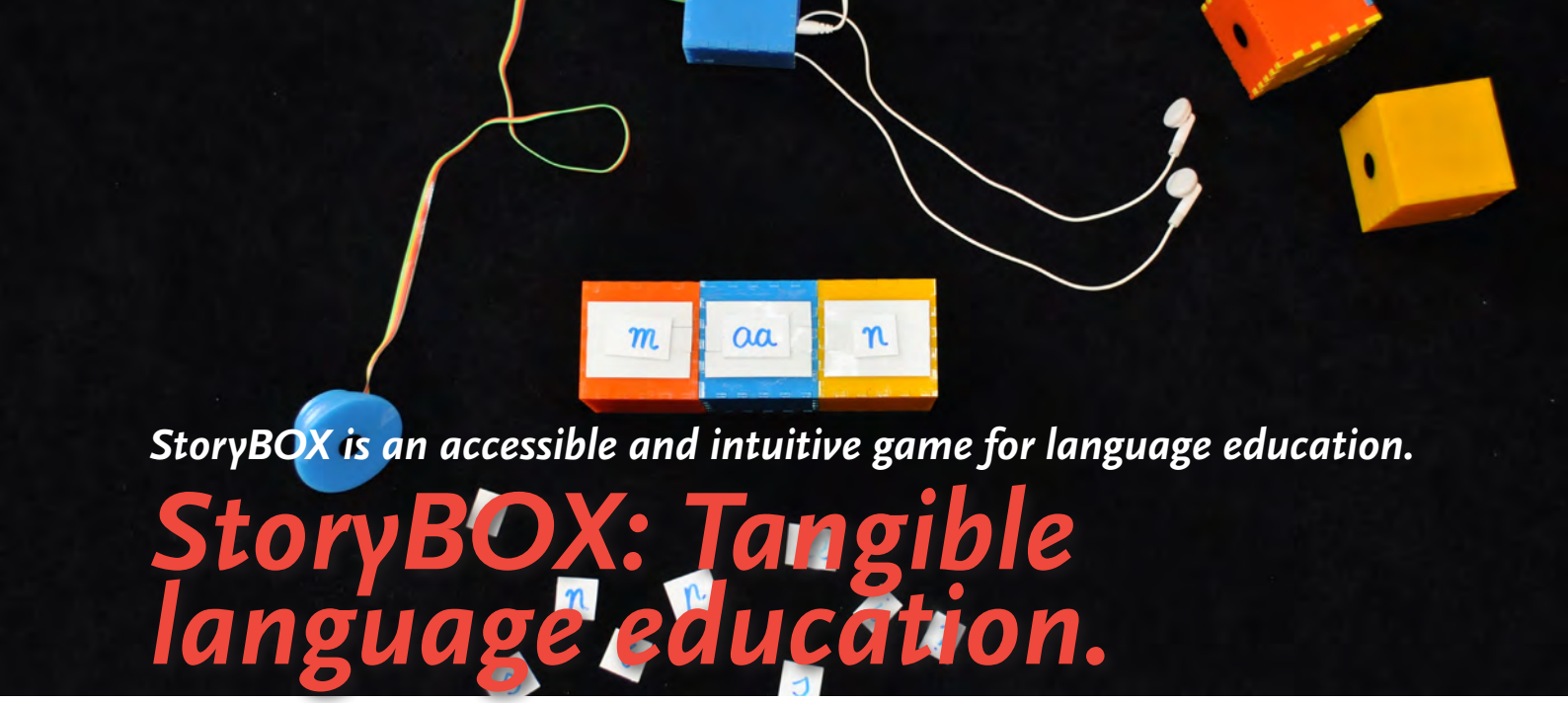
An explicit goal of the GATE project is to make the knowledge obtained in the research available to industry. The prime mechanism for this is knowledge transfer projects in which research institutes and companies work together to make the results fit-for-use by industry. In total 1.5 million Euro was available for such knowledge transfer projects. Over the past year 15 projects have been defined for this, most of which are already underway. The remaining projects will start in early 2011. They involve companies such as Vstep, Cyclomedia, RANJ Serious Games, Noldus Information Technology, Re-lion, Green Dino, Motek Medical, 7scenes, and many more.

For example, Utrecht University and 7scenes will develop, implement and evaluate design principles for storytelling in mobile games for learning. TNO and Noldus Information Technology will use brain signals to measure stress levels in gaming applications. Delft University of Technology and Deltaris will develop techniques to enrich terrains specified by coarse GID data with detail using sophisticated procedural modeling. And the University of Twente and Re-lion plan to work on computer animation for the creation of social signals to enhance the natural interaction between humans and virtual characters.

In each of these projects there is a close collaboration between developers at the companies and researchers in the knowledge institutes. They work on the creation of software libraries for algorithms, on the evaluation of the effectiveness of certain techniques in practice, or on the extension of the techniques. At future GATE events we will report about the results such that they can be used by other companies as well.

The companies involved in the knowledge transfer projects are primarily working on serious games. Unfortunately no true entertainment game companies are involved. It seems that the business structure and processes in entertainment game companies make it harder to participate in such projects. We hope though that in the future also further collaboration will develop with those companies as we believe it will be of mutual benefit.

Mark Overmars
Utrecht University
Director GATE



StoryBOX is an accessible and intuitive game for language education.

StoryBOX: Tangible language education.

StoryBOX focuses on language education for primary school pupils in group three (at the age of six/seven). Tangible, technologically enriched objects enable children to learn by playing.

They can be found on traffic signs, on posters, in stores, on monitors, on packaging, on toys and of course in books, papers and much more. They are everywhere: letters and words. It all seems a matter of course. We would almost forget that many of those texts are very hard to unravel until about the age of six. Until that age their meanings are largely hidden. At the same time, children have a growing awareness that these texts must be decipherable. Once in group three, most children are eager to learn how to read.

During the language lessons, one gradually learns new words and letters, according to a specific method. The reading material is enhanced by attractive illustrations and stories. But generally, learning to read is a serious and structured matter.

Playful learning

The Innovative Pilot Education StoryBOX stimulates the development of language in the form of a game. Playing, after all, is one of the most natural ways to learn. Pupils in group three still play a lot. Particularly for them, the opportunity to learn and play at the same time should not be disregarded.
StoryBOX offers children the possibility to discover language in a playful and intuitive way. This may be an important enrichment of the existing teaching methods.

'v' – 'i' – 's'

StoryBOX consists of a number of tangible, technologically enriched blocks. Every block contains a sound that can be listened to individually or in a series, using a 'stethoscope'. Pupils are challenged to form words out of sounds. For example, when the 'v'-sound is linked to the 'i'- and 's'-sounds, one hears 'vis', Dutch for 'fish'. When the combined sounds do not form a word, one hears nothing but the separate sounds.
The children examine – on the level they're capable of at that moment – the sounds, letters and words together. Because of the audio and the tangible quality of the interactive blocks, the exploration of the language is experienced as playing, rather than learning. They build, change and combine out of their curiosity, using various senses.

Users as designers

Waag Society is a knowledge centre in Amsterdam that researches social applications of technology. Users play an important role in the development methodology of Waag Society. As such, the development of StoryBOX is carried out in close collaboration with a primary school. Pupils and teachers test the game in every new phase of the developing process and improvements are made according to their feedback.

Therefore, Waag Society's design not only satisfies the demands of language education, but also suits the practice of the teacher. And above all it offers pupils an exciting and playful way of learning.

This research is being supported by the GATE project, funded by the Netherlands Organization for Scientific Research (NWO) and the Netherlands ICT Research and Innovation Authority (ICT Regie).


miriam@waag.org


emilie@waag.org

Emilie Resink and Miriam Reitenbach both work at Waag Society, as education specialist and usability researcher respectively. Together they research the use of StoryBOX.
Miriam Reitenbach holds a Master's degree in Industrial Design Engineering. She mainly focuses on the areas of ergonomics and user involvement within design processes.
Emilie Resink holds a Master's degree in Dutch Language and Literature and has been teaching Dutch Language in secondary education before joining Waag Society.
Betty Bonn is work package leader and contact person. betty@waag.org