abilities for schematization and analogy, fundamental cognitive processes that enable the generalization of discrete instances of language use to broader patterns and constructions.

**Age Group Focus**

The initial version of Language Quest is targeted at the middle years of elementary school (3rd and 4th grades). The modular structure of the program makes it easily extensible to both younger and older students. A version focused on developing linguistic skills in adults could be easily adapted by changing the story theme and art style, while preserving the current game mechanics and interaction design.

**Research Project Status**

As of October 2013 (Phase 1), an overall program architecture has been completed, as well as designs for multiple quests and minigames. In the quests, students meet characters from local cultures and complete tasks with them in order to progress through the story. As they proceed, they unlock mini games and other rewards. Mini games focus on specific skills that contribute towards language learning ability, such as sound discrimination, character recognition, metalinguistic awareness, and syntax flexibility. The games support a broad range of listening, speaking, reading, and writing skills.


Kinection is currently in the process of building playable versions of the quests and games and testing these to refine the game mechanics and tailor the gameplay experience to the audience.

For more information on the Language Quest project, please contact Doug Nelson at Kinection: doug@kinection.com

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## B.) Make My Own Designs, LLC: "SpeakAgent".

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SpeakAgent is a series of touch-screen games for learners in grades K-5 to develop long-lasting phonological awareness and processing in second languages, with a side benefit of also acquiring basic syntax and receptive vocabulary. The game takes advantage of recent findings in the emerging field of developmental neurolinguistics to advance beyond the current state of the art, in partnership with leading experts such as Dr. Jo Anne Kleifgen, co-director of the Center for Multiple Languages and Literacies at Teachers College, Columbia University.

Today's Computer-Assisted Language Learning (CALL) products are not meeting the needs of young learners in four ways:

1. They target either a Pre-K audience or 6th grade and above, but not the K-5 market.

2. They generally use a direct instruction method that features artificially constructed "units" or lessons bereft of cultural context, rather than using natural situations and interactions.
3. They tend to focus on reading, syntax and language production at the expense of phonology, using a vocabulary set that does not apply to the real world of kids.
4. They often fail to engage young learners.

SpeakAgent is a platform designed to address these gaps: (1) It is designed to serve grades K-5 and, based on the development team's experience at PBS KIDS and Houghton Mifflin Harcourt, is further segmented for grades K-2 and 3-5. K-5 is a time during which the brain is still highly neuroplastic (see Fig. 1), but where the child has the skills to master challenging new material in a game format. (2) SpeakAgent aims to immerse learners in an engaging game environment that helps them to acquire meaning naturally through self-directed, culturally relevant play and dialog. Learners can also use SpeakAgent's unique Phrase Builder to experiment with word and sound combinations and see how characters react, creating statistical learning opportunities available on no other platform. (3) SpeakAgent's experiential, auditory approach seeks to develop phonological awareness and word recognition, creating long-lasting changes to the brain that will make learning languages easier later in life. Instead of choosing words and sounds used by adults, SpeakAgent focuses on the core vocabulary used by native speakers at 36 to 60 months. (4) By creating engaging games targeted to narrow age bands (K-2 & 3-5), together with a compelling narrative, SpeakAgent aims to make learning the phonology of new languages engaging and fun.

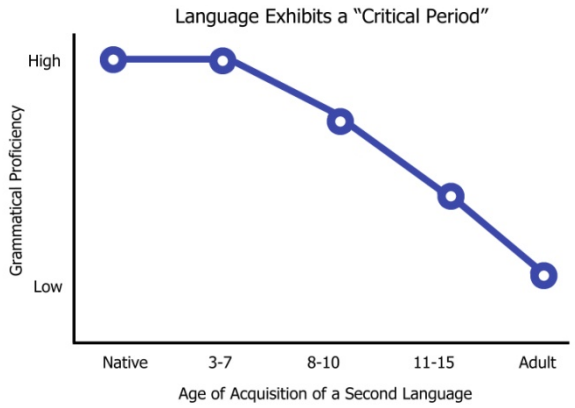


Figure 1: The Relationship between Age of Acquisition of a Second Language and Language Skill Adapted from Johnson and Newpoer(1989).


Grades K-2 play in an open-ended "sanbox" environment while hearing related and frequently repeated vocabulary. This develops phonological awareness using a highly engaging play pattern.

Grades 3-5 play an adventure role-playing game that has a storyline, "quest" challenges, and varied game play, including reflex-based, discovery-based and dialog-driven modalities.

**Continuous Improvement Approach**
SpeakAgent uses player behavioral data to analyze the best path for learning. It aims to learn over time what specific behaviors and sequences result in measurable learning progress and optimize the play styles, sequences and word sounds, forms and classes to most quickly derive the best outcomes for a specific target language. (For example, we may find that exposure to certain phonemes makes for the optimal starting point.) SpeakAgent would allow A/B testing on several such dimensions. SpeakAgent also has a ground-breaking research plan for Phase II that intends to test for neuroplastic changes in young children and determine the speed of acquisition and the extent to which changes persist over time. The type of electroencephalography (EEG) testing to measure phonological processing has never before been performed with a language learning game.

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## C.) Muzzy Lane Software:
## NELL; A game to promote neuroplasticity in early language learning

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For decades, studies have shown that young children have a unique ability to rapidly acquire new language skills. Today's researchers from neuroscience, psycholinguistics, and second language acquisition have been able to locate the biological foundations of this ability and measure the cognitive benefits associated with it, gaining a better understanding of the brain processes and the overall benefits bilinguals exhibit in executive functioning and general learning.


Our project aims to create an interactive game for children ages 6-9 that will immerse them in a naturalistic language environment in order to enhance their ability to distinguish new sounds and structures, helping to 'prime the brain' for language learning experiences. Research shows that when specific language learning pathways are established in the brain at an early age, those pathways can facilitate the building of new language connections later in life. We hope to replicate the thinking process that young bilinguals experience: balancing knowledge of two different languages at the same time and having the mental flexibility to choose between them in a given situation. NELL would provide players with practice in these mental balancing skills by focusing on a variety of unique sounds and grammatical structures from several stylized