Proposal for the Psy-Connection Award for 2012-13

How Can We Better Teach Early Chinese Word Recognition and Writing?
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Given that about one fifth of the population of the planet speaks Chinese as a native language as well as the increasing importance of Chinese as a global language of education and business, we suggest here creative and optimal ways for teaching Chinese word recognition and writing at the initial learning stages. Compare to the traditional approach of rote learning, we develop the new teaching tools to help kindergarten children learn Chinese word in classroom settings. The one named “RoBox (識字寶)” is designed for children to initially learn to recognize new Chinese characters or words. The other is a set of interactive scenarios in which children can be taught to learn Chinese writing in analytical strategies. These game-based programs will promote the better teaching in Chinese word recognition and writing and prepare children better for formal schooling.

Chinese word recognition

Chinese as an ideographic language differs substantially from alphabetic languages and therefore learning processes might be characterized by having unique skills. A main characteristic of Chinese writing system is the morphosyllabic nature, meaning that Chinese characters map onto syllables and use symbol to represent meanings. When learning a new word, Chinese children are limited in the phonological information available within the opaque relations between the word symbol and the sound. A variety of cognitive skills, such as visual skills, morphological awareness and phonological awareness have been found to be important for early Chinese word recognition (e.g., Huang & Hanley, 1995, 1997; Li,

As a word recognition toy for children aged two-to-six years old, RoBox is designed to facilitate children’s word recognition by matching words and pictures. Radio-Frequency Identification (RFID) device is applied to this teaching tool and used for identifying the correct matches. RoBox separates the words and pictures into two units rather than simply listing them together, so that children will actively rotate these units and try to find the correct matching between words and pictures with the help of the voice response. Pinyin knowledge is also presented above the target words to facilitate children’s mapping of graphemes and the sounds of Chinese characters. Compare to the traditional flash cards, RoBox help children integrate the sound, meaning and written forms. With the magnets embedded in the box, teachers or parents can change the RFID card easily. There are different RFID card sets with various themes, such as animals, fruits and transportation, so the learning materials could be updated as children grow up.

The game-based learning approach not only teach children recognize new Chinese words more efficient, but also exercise their visual-motor coordination and hand flexibility in early years. Children’s phonological awareness is also improved, as each word with the correct matching picture will be pronounced. In addition, Children are involved more in RoBox play and they thus might feel more motivated to learn Chinese. The multi-channel stimulus and training can also improve children’s learning efficiency.

Chinese word writing

The writing system of Chinese is consisted of visually complex components within the characters and writing skills in Chinese tends to be particularly difficult for
young children. Such writing is complicated because stroke order is inflexible but non-intuitive to non-Chinese learners; thus, more visual-motor skills and character knowledge is required for Chinese writing. Copying, as a dominant learning approach for learning to write across Chinese societies, not only strengthen children’s visual-motor integration skill, but also tend to be an implicit learning process through which children would store and activate the spatial structures within Chinese characters. However, copying without any directed analytic strategies was negatively associated with children’s word reading (Lin et al., 2009). Thus, we develop a set of interactive learning scenarios integrated copying practice, radical knowledge and word morphology knowledge in Chinese writing instruction. All the learning scenarios will be implemented in small group of 4-6 children in classroom sittings.

In the first scenario designed for the pictograms characters, teachers will show the character and a picture of the object the character represents, and then compare the shape of the character and the object and explain how the character evolved to its current form. For example, the pictograms character “日”  \( ri \) (sun) has the shape of the sun. In the second scenario that is designed for the semantic-phonetic compounds, children will be first told a story that involves the target characters, and then teachers will explain the contribution of semantic component to the character meaning and the phonetic component to the character pronunciation. Furthermore, teacher will assist children to compare the difference between the similar characters in one scenario. After children having a basic perception of Chinese character structure, meaning and sound, in the last scenario, teachers will describe a scene that a cartoon teacher is invited to teach Chinese writing and children will be asked to copy down the new character on their own piece of paper. The copying practice will help young children memorize the characters and improve their visual-motor coordination.
References


小亮心情很好
情 = 小 + 青

他看见了清清的河水
清 = 氵 + 青

和河边的蜻蜓
蜻 = 虫 + 青

今天天气晴朗
晴 = 日 + 青
“識字寶”RoBox is a language training toy for children aged two-to-five years. It is designed using RFID technology and aims to facilitate children’s word recognition in both Chinese and English by matching words and pictures. Compare to the traditional flash cards, “RoBox” separates the words and pictures into two units rather than simply listing them together. Children need to rotate these units and try to find the correct matching between words and pictures with the reminder of the voice response. The game-based learning approach can not only enhance children’s learning interests but also exercise their hands coordination and flexibility. Children’s phonological awareness is also improved, as each word with the matching picture will be pronounced. Moreover, the multi-channel stimulus and training can improve children’s learning efficiency.

With the magnets embedded in the box, parents or teachers can change the RFID card easily. There are different RFID card sets with various themes, so the learning materials could be updated as children growing up.
不對哦！再試一次?
Not right! Let's try again?
× ×

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香蕉...
Banana...

太棒了！
Well done!
*\(^_^)/*

xiāng jiāo
香蕉