New approach urged for dyslexic Chinese

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The city needs to develop diagnostic tests to ensure dyslexic Chinese-speaking children get early treatment, researchers say.

University of Hong Kong academics said yesterday that new testing was needed because they had found basic differences in the parts of the brain that affected the way English- and Chinese-speaking children interpreted written language.

"We really need to work on this," said Tan Li-hai, professor of psycholinguistics and cognitive neuroscience and co-director of the State Key Laboratory of Brain and Cognitive Sciences. "At the moment we just don't know what to look for in Chinese-speaking children."

This contrasted starkly with the situation for European languages, particularly English, for which there were testing mechanisms, Professor Tan said.

"If you measure English-speaking children's phonetic sensitivity and awareness before the age of two, you can predict their reading ability when they reach primary school. Then you can give early treatment to minimise the effects of dyslexia."

Chinese-speaking dyslexics could only be identified once they began to read and write.

"In the future we will develop some behavioural tests... based on working memory and motor functions," Professor Tan said, adding that it would take at least two to three years to come up with the tests.

He made the comments based on a study comparing brain patterns of 16 dyslexic and 16 normal children in Beijing while reading. The scans showed significant differences in activity in certain parts of their brains - but those were totally different to the areas identified by similar studies on dyslexic children in the west.

"Dyslexia in China and in the west may be two different brain disorders," said Siok Wai-tong, assistant professor of neurolinguistics, who also worked on the study. "They result in the same symptoms, reading difficulties, but the causes may be very different."

While Western dyslexics demonstrated less brain development in areas known to be used for processing and storing sound information, the Chinese dyslexics had developmental defects in areas linked to working memory and motor functions. Dr Siok said this had important ramifications from an educational point of view. "Remedial exercises for dyslexics in the west tend to focus on phonological training to build up children's abilities in this area," she said. "These may not be effective for Chinese-speaking children."

She said teachers needed to develop different training exercises for Chinese dyslexics to stimulate the parts of their brains that were inhibiting their ability to comprehend written language effectively.

Possible exercises: Dr Siok suggested including reading out a sequence of random digits and asking a child to memorise and repeat this, or to practise copying a drawing.