

Dyslexia and working memory

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Dyslexia is one of the Specific Learning Differences (SpLDs) that affects language learning (Kormos and Smith 2012). Learners with dyslexia may experience difficulties in reading, spelling, processing information, retention of information in the memory, self-esteem, and so on. In addition, these learners usually have poor working memory (WM) capacity. Thus, it can be useful for teachers to have an understanding of how WM influences language learning and how to help learners with poor WM capacity in the language classroom.

WM and language learning

WM is defined as the ‘ability we have to hold in mind and mentally manipulate information over short periods of time’ (Gathercole and Alloway 2007: 4). In other words, it is ‘a mental workplace’ (ibid.). A poor WM can lead to learners forgetting part or all of the instructions, getting distracted easily, being reserved in group tasks, avoiding answering questions and struggling with complicated tasks (ibid.). A recent study shows that WM capacity particularly influences second language (L2) grammar learning (Indrarathne and Kormos in press). This study was conducted in Sri Lanka with the participation of 100 university undergraduates who were L2 learners of English. The participants were divided into four input groups and one control

group. The target grammatical structure was the English causative 'had'. All groups received the same input texts (three short stories) in which causative 'had' examples were embedded, but they received input in different methods. The input groups were:

Explicit 1 group: Target examples in the input texts were boldfaced, learners were asked to pay attention to those examples; the form and the meaning of the target grammatical structure were explained to the learners (maximum teacher support)

Explicit 2 group: Target examples in the input texts were boldfaced, learners were asked to pay attention to those examples, *no* rule explanation.

Implicit 1 group: Target examples in the input texts were boldfaced, learners were *not* asked to pay attention to those examples, *no* rule explanation.

Implicit 2 group: Target examples in the input texts were *not* boldfaced, learners were *not* asked to pay attention to anything, *no* rule explanation (minimum teacher support)

The improvement was measured by pre/post tests. How participants paid attention to target examples was recorded by an eye-tracker. These participants also took four WM tests. The results showed that L2 learners who have a higher WM capacity are better at paying attention to grammar input and can learn new grammatical structures better than those who have a lower WM capacity. This research also highlighted that grammar learning is more productive when explicit input is provided.

WM and language teaching

Teachers should make sure not to provide a lot of input at once. Breaking down input into sections and presenting one section at a time can help learners with poor WM to process a manageable amount of information at a time (Gathercole and Alloway 2007). Providing input in different modes (such as reading and listening), repeating input, breaking down complicated tasks into simple sections and presenting tasks in a clear sequence are also vital.

These learners also benefit from explicit rule explanations of the target structures. In addition, if the target examples in an input text are highlighted, teachers need to draw learners' attention to those examples to assist input processing.

Breaking down instructions (ibid.) and/or displaying instructions until the task is completed can help these learners. Encouraging them to ask the teacher to repeat instructions and giving a printed copy of the instructions may also be useful.

In group tasks, giving the learners more time, simplifying their task to a manageable level, and assigning a less complex section of the task to those who struggle while stronger learners work on more complex sections can be beneficial.

Conclusion

Poor WM capacity, which is one of the issues that dyslexic learners face, mainly influences the processing of language input with novel features. In other words, such learners tend to struggle when learning new language structures. However, teacher understanding and good classroom practices can help minimise these difficulties.

References

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