Dyslexic Reader Detector – Product Proposal

We propose a method of identifying dyslexic readers by analyzing the eye movement of the student.

To use our device, the user would only need to stay fixated while reading the texts shown on a screen. It is recommended for the student to rest his/her chin on a stand so as to maximize the stability of detection result (figure 1). A dedicated camera, as shown in figure 2 below, would be placed in between the student and the screen, pointing slightly upwards toward the student's face so that the eyes of the student is clearly in the camera's view (figure 3). Figure 4 shows what the data we would retrieve after the student finishes the test would look like. A sample video is also provided to show what the camera sees during the reading test (https://streamable.com/1noboj)

Our device contains no intrusive elements that would be required to install on the student's body. All the equipment is portable and can be setup easily.

Figure 1 - Suggested Posture of the User

Figure 2 – A portable setup of our device

Figure 3 - Another angle

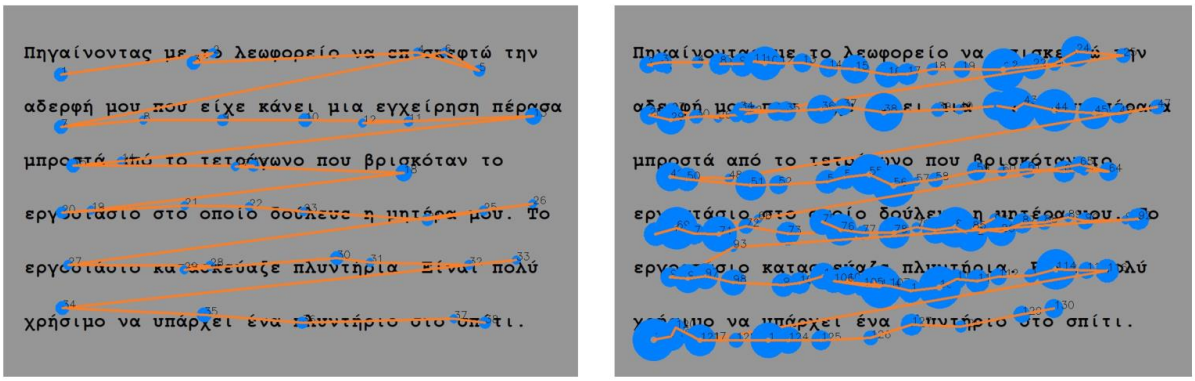

Fig 2. Reading paths. A reading path from a typical (normal) reader (*left*) and from a reader with dyslexia (*right*). The blue circles are the fixations and the orange lines are the saccadic movements. The bigger the circle, the longer the fixation. Clearly the reader with dyslexia exhibits longer fixation duration, shorter saccadic movements, regressive movements and longer reading time than the typical reader.

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Figure 4 - Demo Analysis Result of the program