Review of: "Auto Train Brain mobile app for promoting dyslexia biomarker detection in children at home or at school: Feasibility, Acceptability, Economic impact, Pilot Study and Survey Results"

Ana Matić Škorić[1]

1 University of Zagreb

In this paper the authors present the results of their study on feasibility, acceptability, economic impact, as well as the pilot study and parents' opinion regarding the usage of Auto Train Brain mobile app for dyslexia detection. The title itself discovers that there are very many things the authors deal with, yet the overall impression is that the topics aren't being dealt with thoroughly enough, thus leaving the reader puzzled.

Introduction:

When defining dyslexia and how it is diagnosed, and by whom, I suggest that the authors use manuals, relevant research, and try not to generalize who diagnoses it (e.g. dyslexia is not diagnosed by psychiatrists in all countries, so the authors should bear these country-specific differences in mind when making claims about dyslexia). I see that now it says "in Turkey" but the authors should mention also other practices.

I would also suggest that the authors remove the sentence "Therefore, some children may overcome dyslexia even before they start reading." It is simply too strong, and prone to missinterpretation in so many ways.

Moreover, statements such as "Before the diagnosis of dyslexia, additional learning support should be provided to the child and the nutritional deficiencies should be eliminated" should either be deleted, or accompanied with other relevant exclusionary criteria before the final diagnosis.

I see that the authors included some key definitions that I was lacking when I read the first draft of the paper. Although the artificial neural network and machine learning algorithms are now defined, the introduction to the specific goal remains somewhat messy. Previous work should be better explained in terms of key findings, those which are relevant for the current work.

Methods:

I suggest that the authors use the established term, socioeconomic status, rather than situation. Speaking of the terminology, please avoid using the term dyslexic and healthy children, and use children with dyslexia and typically developing children instead. I would also change the terminology used later in the paper; i.e. dyslexia/normal classification. I would avoid the term normal / healthy.

I appreciate that the authors now explained the procedure and the used materials, as the previous version I read didn't

have those parts, however the structure of this section should be changed. As in other papers, I advise the authors to have the Participant section, then the Materials section, followed by the Procedures, and Statistical Analyses. In the current form there is a bit of a mess, e.g. the Survey is described under the 2.4. Study design, which seems strange since the Survey is another Material, and should be included there. Study design itself denotes different kinds of information in a study, so please follow the regular structure.

Also, please add data on the survey, i.e. what analyses were used to analyse the obtained data, in the Statistical analyses section.

Results:

I myself am not that acquainted with the artificial neural networking, so I can not comment much on that, but as a reader I myself am missing more structure.

Maybe the authors can have different sections, such as small subtitles, for each of the analyises and results report, and start the section with a sentence like: In order to further examine… the … was used, and the results suggest that…

It would simplify the text and make it more readable to different audiences. However, this may be the problem of what I mentioned above - there seems to be a lot to cover in a relatively short paper.

Discussion:

This part should again start by repeating the goal of the study, in very simple terms. I advise the authors to check the language, as there are some phrasings that could be put differently.

Final comments: I must say that, generally, the paper was a bit hard to read, not because of the study itself, but because the way the paper is structured. The aims and the exact procedures done to fill out those aims, are somewhat vague. More structure, more concrete ideas and statements, steps done to get to the goal, as well as clarifications of the procedures, would probably solve this problem to a certain degree.