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Did pandemic monotony make children's oral reading monotonous?

**Evaluation of the intonation style of German third graders using audio,
rating and comprehension test data from 2015 and 2023**

What happens if primary school education doesn't happen in school? The IGLU/PIRLS study (McElvany et al. 2023) on fourth grader's reading skills investigated the effect of the pandemic with comprehension test data from 2021. These children had experienced homeschooling for the better part of their third and fourth grade. But the study showed no or only minor negative effects. The PISA study investigated 15-year olds in 2022 with similarly unsensational results (OECD 2023).

The present study investigates this surprising picture focusing on third graders that had entered school at around age 6 in 2020, thus having experienced homeschooling for the better part of their first two years. Further, instead of paper-and-pencil data it focuses on oral reading prosody, in particular monotonous intonation style. A time-consuming semi-automatic analysis procedure was adopted from Wehrle et al. (2018). The analyses include manual correction of errors in the outcome of automatic pitch extraction by the Praat algorithm and the smoothing of the corrected contour. Only then monotony is captured by two parameters: the "wiggleness" of the smoothed contour (number of turning points per second) and its "spaciousness", i.e. range (number of semitones between especially prominent turning points). Eventually, any stretch of speech > 1s can be located as a point in a two-dimensional monotony-liveliness-space.

In our study the f₀-contours of 800 phrases based on 80 recordings of the same grade level text were included (a fable, 191 words, 10 target phrases selected for investigation). In each child's recording session the text was read two times (prima and secunda vista) as part of a bigger longitudinal corpus (Sappok 2023); investigated here are n_{antePAN} = 21 thirdgraders in 2015 from two classrooms and n_{postPAN} = 22 thirdgraders in 2023 from two classrooms (several recordings of especially slow performances had to be excluded). Both participant samples were collected at the same school.

Additionally, all participants underwent testing using the ELFE-I-test on comprehension on word-, sentence- and text-level (Lenhard & Schneider 2006). Further, for each recording several perceptual ratings were collected from expert raters (n_{exp rat} = 24). The resulting intonation style measures, test measures and perceptual measures yield detailed models of each participant's stage of learning. The results show that the paper-and-pencil test data on reading comprehension yield no "pandemic effect", the rating data yield only minor pre-post-pandemic differences, whereas the f₀-based data show very clearly that post-pandemic third graders read more monotonously. These results are discussed from methodological and didactic perspectives.

References:

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