Phonetics Colloquium at UdS

on Wednesday, **07 May 2025**, 14:15

location: building C7.2 in room 5.09

Valentin Kany

Universität des Saarlandes

Development of Speech Fluency Profiles and Fluency Scores to measure speech fluency of L1 and L2 preschool children

Language Proficiency Assessment (LPA) for preschool children is ubiquitous in Germany and will become mandatory in more and more federal states over the upcoming years [1]. Up until now, LPA is done manually, with pen and paper, which is highly subjective, inconsistent, and creates a test setting for the children that hinders natural speech production. To tackle this problem, a serious-game-based test method was developed, in which the children talk with a virtual character "Wuschel" [2]. With this test method, the children's speech is analysed using various measures of vocabulary and grammar. Beyond that, speech fluency was found to correlate with speech competence [3]. Thus, it could serve as a further factor in the LPA test paradigm for preschool children that is yet to be investigated.

To analyse the fluency of children, an annotation method suitable for the gamebased test method was developed. Using this annotation scheme, individual speech fluency profiles for each child were developed [4]. These profiles serve as an overview of the child's performance in terms of speech fluency. They highlight strengths and weaknesses briefly and reveal individual patterns.

However, to integrate the fluency evaluation into a standardised LPA, an overall fluency score needs to be constructed to complement the already existing vocabulary and grammar scores. This score can be derived from the fluency profile by adding weights to its plain measurements to represent their influence on perceived fluency. To find the influence the objective measures from the profile have on the perception of fluency, a manual assessment has to be conducted, which will be introduced in the talk. Preliminary results from the fluency assessment will be presented and the process of deriving a weighted fluency profile with an overall fluency score will be discussed.

References

[1] Lisker, A.: *Sprachstandsfeststellung und Spachförderung im Kindergarten sowie beim Übergang in die Schule. Expertise im Auftrag des Deutschen Jugendinstituts*, 2010. URL http://www.dji.de/bibs/Expertise_Sprachstandserhebung_Lisker_2010.pdf.

[2] Roche, J., S. Haberzettl, G. Pagonis, M. Jessen, and N. Weidinger: *Serious Games in der Sprachstandsermittlung*, pp. 340-358. Narr Francke Attempto Verlag, 2019. doi:http://dx.doi.org/10.22028/D291-35846.

[3] De Jong, N. H., J. Pacilly, and W. Heeren: *Praat scripts to measure speed fluency and breakdown fluency in speech automatically. Assessment in Education: Principles, Policy & Practice*, 28(4), pp. 456-476, 2021. doi:10.1080/0969594X.2021.1951162. URL https://doi.org/10.1080/0969594X.2021.1951162. https://doi.org/10.1080/0969594X.2021.1951162.

[4] Kany, V. and J. Trouvain: *Annotation of disfluencies in child speech*. In S. Grawunder (ed.), *Studientexte zur Sprachkommunikation: Elektronische Sprachsignalverarbeitung 2025*, pp. 247-254. TUDpress, Dresden, 2025. URL https://www.esv.de/pdf/2025_247_254.pdf.