

# Classroom Dialogic Interaction: Contextual Variability of Allo-repetitions<sup>1</sup>

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In the research on effective classroom interaction, the two-way nature of communication [Frelin, Grannäs 2010] is of particular interest. By examining classroom dialogue, we aim to identify linguistic features of classroom communication, and estimate the impact of various situational contexts on it. According to the Interactive alignment theory, aligned mental representations in speech manifest themselves linguistically through repetitions [Pickering, Garrod 2004; Branigan et al. 2014]. Based on the theoretical statements of the model, we selected discursive allo-repetitions [Tannen 1987; Dumitrescu 1996] as a measurable feature of communicative interaction.

We examined grades 5 to 8 as a key contextual factor influencing classroom interaction, hypothesizing that the students' age might affect the linguistic characteristics of interaction in the classroom in different ways. The structural aspects of allo-repetitions included 1) echo and modified repetitions (expanded, reduced or reformulated), 2) distant/contact repetitions, the latter marked by one speaker repeating the previous speaker's statement upon taking their turn. We also considered repetition spontaneity (forced/unforced) and functions: accepting and recontextualizing. In total, we analyzed 24 lessons (about 40 minutes each) from 12 teachers, including literature and native language lessons, suggesting that the structure of repetition in teachers' speech would vary by grade: echo and reduced repetitions would decrease in higher grades, while expanded and reformulated ones increase. Additionally, we expected contact repetitions to dominate in younger grades and distant – to be more common in higher grades, reflecting qualitative shifts in alignment driven by the need to address more complex ideas [Girolametto, Weitzman 2002]. Similarly, we anticipated a decline in forced repetitions in students' speech in lower grades, corresponding to an increase in learner initiative. The functions of repetitions in teachers' speech likely reflect individual strategic choices.

The analysis identified a total of 3320 instances of repetition, 2415 in teachers' speech, 905 in students' speech. We developed models to examine whether grade influences the frequency of different repetition types, with a teacher and a specific lesson treated as random factors. We used Generalized Linear and Mixed Models (GLM, GLMM), implemented via the `glm` and `glmer` functions from the `lme4` package. For each of the dependent variables, we constructed a set of models: a simple one with the grade factor, and two mixed ones with random factors including the teacher – lesson interaction. Model fitting was performed using the MLE, and model quality was assessed using the AIC. For the structural variables, the mixed model with fixed effect of a grade and a random effect of a lesson performed best, for the spontaneity and function the best was the model with a single fixed effect of grade.

Structurally, the probability of using echo repetitions decreased significantly for grades 7 ( $\beta = -0.681$ ,  $p = 0.030$ ) and 8 ( $\beta = -0.758$ ,  $p = 0.028$ ) compared to grade 5. In contrast, reformulation was more frequently used in grade 7 compared to grade 5 ( $\beta = 0.724$ ,  $p = 0.009$ ). We also found that contact repetitions tend to become more common in higher grades, 7 ( $\beta = -0.4888$ ,  $p = 0.026$ ) and 8 ( $\beta = -0.8195$ ,  $p < 0.001$ ). We found no differences for expansion and reduction, as well as for spontaneity, and any of the functional aspects.

Our results suggest that grade may influence certain structural aspects of allo-repetition, particularly, the use of echo-repetition and reformulation, as well as the frequency of

contact repetitions in higher grades. The absence of differences in functional aspects might indicate the consistent individual strategies of allo-repetitions regardless of grade.

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