

# Self-directed *okay* in mathematics lectures

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## Abstract

This article investigates the inter-personal and intra-personal functions of the discourse marker (DM) *okay* in sequences of self-directed talk during university Mathematics lectures. This article takes a conversation analytic approach to the use of *okay* in the self-directed talk of three graduate students giving Mathematics lectures at a U.S. university. While research focuses on *okay* almost exclusively as a transition, our microanalysis reveals that self-directed *okay* appears in three general locations and functions intra-personally to direct the teachers' attention and inter-personally to mark transitions, to open self-repair sequences, and to verbalize thought processes in sections of discourse in which the lecturer is using non-verbal resources to emphasize information or demonstrating how to *do math*, which we call *pedagogically-directed talk*. By using self-directed *okay*, the three instructors focus their own attention while giving their students insight to their cognitive processes, emphasizing key information, and maintaining joint attention to the interactive practice of the university lecture at a point when student attention could become diverted from the task at hand. Findings suggest that self-directed *okay* is not merely a transition but concurrently serves critical intra- and inter-personal functions and that resources like self-directed *okay* should be taught as instructional practices for novice teachers in teacher preparation programs.

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## 1. Introduction

This study addresses the use of *okay* in sequences of self-directed talk in university Mathematics lectures. Both the use of discourse markers (DMs) and self-directed talk, or self-talk, have been demonstrated to affect listening comprehension, be affected by online planning, and facilitate classroom interaction (Hall and Smotrova, 2013; Steinbach Kohler and Thorne, 2011; Tyler, 1992; Williams, 1992). In large part though, the two (DMs and self-directed talk) have been studied as distinct characteristics of classroom discourse and have been attributed discrete inter-personal and intra-personal functions. This study seeks to overcome this binary categorization of DMs and self-directed talk by conceptualizing language as a dynamic semiotic resource that serves concurrent intra-personal and inter-personal functions.

Our study contributes to the growing bodies of literature on naturally occurring classroom interaction, DMs, and self-directed talk. We discovered the occurrence of *okay* within sequences of self-directed talk while viewing video recordings of university-level Mathematics lectures as part of a research project involving the use of DMs in STEM (Science, Technology, Engineering, and Mathematics) classrooms. During our investigation of DMs, we noticed that there were times when *okay* was uttered at a clearly lower volume than surrounding talk and with the speaker's eyes averted from the students and

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typically toward a non-verbal resource, such as the chalkboard or notes. While these moments often occurred at times when speakers were making transitions between parts of a lecture, we observed that they also occur within sections of discourse when teachers display attention to recipient design (Sacks et al., 1974) and write on the board. In such sequences, we argue *okay* in self-directed talk is a minute yet mighty resource for self-regulation and teaching.

Our analysis reveals that DMs are critical not only to the discourse structuring of lectures for the other (students), as *okay* has generally been characterized in the literature, but also for the self (teacher). In addition, we show that self-directed talk is both a resource for self-regulation and a dynamic resource for maintaining student attention and *doing teaching by doing being* a Mathematician. Such findings are significant for those interested in talk-in-interaction in addition to those involved in teacher preparation at the university level.

### 1.1. *Okay in academic contexts*

Generally speaking, *okay* is viewed as a transition and marker of common ground. This reflects findings from talk-in-interaction studies of *okay* in both informal and institutional contexts (Bangerter and Clark, 2003; Condon and Čech, 2007; Gaines, 2011; Müller, 2005; Schiffrin, 1987). For a concise synopsis of research on *okay*, see Gaines (2011). The following subsections review the findings of corpus, variation, and conversation analysis (CA) studies focusing on *okay* in university classroom settings with a specific focus on sequential location, prosody, and non-verbal resources as well functions. We argue that while studies have mentioned the relevance of non-verbal resources their analyses have lacked attention to gesture and the use of video data to support and present their analyses. We also suggest that *okay* has been considered only as a signal to listeners about the speakers' next discursive move and that the intrapersonal and interpersonal power of *okay* has largely been ignored.

#### 1.1.1. *Sequential locations, prosody, and non-verbal resources*

According to studies of *okay* as a DM (Rendle-Short, 2000) and as a structural marker (Schleef, 2008), it typically occurs around transitional spaces and is most often found at the beginning of sections of discourse and less frequently at the end and in the middle of stretches of discourse (Levin and Gray, 1983; Rendle-Short, 2000; Swales and Malczewski, 2001; Schleef, 2008). In beginnings, *okay* is spoken with the same (or increased) volume and pitch as surrounding speech, falling intonation, and potentially in breaths or dental clicks (Rendle-Short, 2000; Schleef, 2008). Pauses and non-verbal actions regularly precede *okay* when it opens sequences and it is followed immediately by another DM such as *so* (Rendle-Short, 2000; Swales and Malczewski, 2001; Schleef, 2008). While *okay* is overwhelmingly found at the beginning of stretches of discourse in our data, this sequential position is not the focus of our analysis.

The instances of *okay* we analyze are at the end and within sequences of talk. At the end of sequences, Rendle-Short (2000) reports that *okay* is produced at a lower volume and pitch but still with falling intonation. In her data, *okay* in this position is followed by a pause in which a computer science lecturer changes the slide for his presentation. Other studies also note pauses either before or after instances of *okay*, and that *okay* might be produced in an attenuated manner with gaze averted from the students and possibly toward notes (Levin and Gray, 1983; Schleef, 2008). While we are concerned with the sequential locations and prosodic features of *okay*, participants' gaze, gesture, and orientation to non-verbal resources such as chalkboards or lecture notes are of particular interest to us.

Schleef (2008) states that lecturers in the Natural Sciences employ non-verbal resources such as the chalkboard to explain content and that movement from developing information in writing to speech requires structural markers as “a way to lexically highlight and structure important and often visual material” (Schleef, 2008: 76). While mentioning non-verbal resources, Schleef (2008) does not provide any detailed analysis or discussion of them. Rendle-Short (2000) accounts for non-verbal resources and to some extent gaze and gesture, but she describes participants using slides prepared in advance while our participants, mathematics lecturers, are developing information *in situ* on the chalkboard.

We also argue that the detailed analysis of gaze, gesture, and the use of non-verbal resources in coordination with the prosody is essential for a deeper understanding of *okay* in the middle of sections of discourse. Only Rendle-Short (2000) analyzes *okay* in the middle of stretches of discourse. The prosodic structure of *okay* varies within sequences based on the function it serves: a comprehension check, to bracket a definition, or to mark a change in footing. As a comprehension check, *okay* is produced quietly with rising intonation and may be preceded by a pause. When pairs of *okay* bracket a definition, the first is spoken prominently but the second is spoken quietly and both with falling intonation. In Rendle-Short's (2000) data, the first bracketing *okay* is preceded by a pause but not the second. The bracketing *okay* resembles *okay* at the beginning and end of stretches of talk but only encase a single definition. To mark a change in footing, Rendle-Short's (2000) participant produces *okay* at the same volume and pitch as the surrounding speech and with no pauses on either side. While Rendle-Short's (2000) transcription accounts for gaze and gesture, she does not take them into account in her analysis.

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