

Embodied Discourse Analysis of Online Student Study Sessions: A Novel Method of Screen Recording Research

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Abstract: Understanding the experience of nontraditional learners in distance learning is important for course design and facilitation and may illuminate issues that contribute to high attrition rates. This study used a novel approach to capture and analyze the engagement and distractions of students as they participated in online classes. Students recorded their screens along with webcam and audio, and this data was analyzed using embodied discourse analysis. Findings suggest that mother-students were particularly challenged with balancing these two roles at home during the COVID-19 pandemic but redesigning the environment and utilizing self-regulated learning strategies may be beneficial.

Introduction and background

While participation of adult learners in distance education has steadily increased (MacDonald, 2018), the sudden expansion of remote learning due to the COVID-19 pandemic has made it especially important to understand the experience of students who are learning from home with all of the distractions that entails. Our research questions are, 1) *How do we explore nontraditional students' engagement in online learning tasks by using embodied discourse analysis?* 2) *How can we identify distractions in the learning environments of nontraditional students that contributes to or are a barrier to their success?*

Student engagement and distraction: Discourse Analysis Approach

Researchers have conceptualized engagement in terms of observable student behaviors, emotions, cognitive dimensions like self-regulated learning, and academic aspects like time on task. A newer and related area of research in online learning is the study of distractions (Blasiman et al., 2018; Hollis & Was, 2016), which can be barriers for student engagement. Coding methods for identifying student engagement during in person class time are well-established (Kubany & Sloggett, 1973), but a consistent method does not yet exist for distance learning.

An embodied discourse analysis approach can be helpful in more fully understanding an event as this enables us to move beyond the surface actions of an event and see the more subtle and compelling power dynamics at play among the participants (Rowe, 2004). In our study, the discourse is the actions the students is taking, the discursive practice is the prosocial behaviors of the student that conform to instructor expectations, and the sociocultural practice is the home context where the practice of being a student intersects with the home life and other identities of the students.

Methods

Our collective case study included four academically high achieving working mothers who were all experienced in distance learning prior to the pandemic. Students were given unique *Zoom* links and instructed to share their screen, enable their webcam, and microphone to record ambient audio during study sessions. Interview transcripts were organized in *Dedoose*, a qualitative analysis software, and screencast annotations were organized in *Google Sheets*. Students' actions on the screen were annotated in a spreadsheet, including mouse movements on the screen, active windows, the gaze of the student, other movements captured on the webcam, and ambient audio in the room where the student was studying.

Data analysis and findings

We watched each recording in whole and in parts several times at various playback speeds, identifying the type of interaction (student action on the screen), tenor (level of distraction as evidenced by gaze and noises in the environment), and field (environment of the student and situation within the course) (Rogers, 2003). We made a separate spreadsheet for each study session using a template created in *Google Sheets*, which could easily be shared among the researchers, enabling multiple researchers to code the excerpts and determine inter-rater reliability. Each excerpt was described by the researchers with annotations. We used an inductive approach to develop process codes across participants (Charmaz, 1996). We labeled each excerpt objectively as either

undistracted or *distracted*. For example, loud noises from a television were coded as *distracting*, whether or not the student was actually distracted by it.

We noticed that at times, the student worked through the distractions, so we also marked the level of engagement of the student: *continues working*, *stops working*, or *undetachable*. These two levels of coding helped to identify whether the loud noises from the environment were actually distracting the student. Each undistracted excerpt was coded for the type of learning activity in which the student was engaged: *reading*, *writing/creating*, *watching a video*, or *navigating/searching*. Each distraction was coded by the type of the distraction (*switching windows/scrolling*, *cell phone*, *social media*, *looking away from the screen*, *engaging with another person*, *walking away*, *drinking/eating*, *movement*, *talking*, *noise*, or *technology*) as well as the source of the distraction (*self*, *adult*, *child*, *animal*, or *other*). Codes were defined to ensure uniformity in application throughout the sessions analyzed.

The excerpts were sorted and totaled to determine total time spent being distracted, in recovery, or undistracted, as well as the percentage of the total time. Codes were totaled for each session and frequency of each was determined. Excerpts were grouped by distraction, learning activity, source, and engagement to determine correlations and triangulate with interview responses. This process allowed us to draw conclusions around the engagement-distraction interaction in each study session and synthesized as a whole.

Results showed that nearly half of the recorded study session time included distractions. Participants were able to work through varying amounts of distraction, mediated by the urgency of their children's needs, the interest in or relevance of the content to the learner, and the instructional design. For example, in an activity where learners were scaffolded over several lessons through the process of using financial reports to analyze familiar companies, the learners were able to persist through distractions, particularly when they read aloud or spoke to themselves about what they were doing. Students were also more actively engaged during generative activities versus more passive learning activities like reading or watching videos.

Contributions and limitations

The findings in this study have helped us to understand how working mothers participate in distance education. For the most part, students work in small chunks of time whenever they can, preferably in the least distracted location in their home. Children were the biggest source of distraction for these mother-students. Maintaining these two roles in the home environment was challenging for these participants. It will be important for further study to analyze the experience of caretakers of other genders as well as students without caretaking responsibilities to understand the student experience from an equity perspective. Students who struggle academically should be studied in this way to determine what level of distractions they face as this may be a determining factor in their lack of persistence. Results highlight the importance of considering the high level of distraction present in the home environment during distance learning. The close analysis used in this study provided important insights into the experience of nontraditional learners in distance education and further study using these methods of data collection and analysis can be beneficial in illuminating the challenges and strategies that students use.

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