Chapter 8
Temporal Considerations in Analyzing and Designing Online Discussions in Education: Examining Duration, Sequence, Pace, and Salience

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ABSTRACT

Time plays a fundamental role in both the benefits and challenges of using online discussions as a pedagogical tool. This makes temporal considerations critical both for conducting analyses of how learning takes places through online discussions and for designing effective structures to support discussion activity. However, despite the importance of temporal considerations for online discussions, the majority of research on online discussions and guidance for design does not explicitly address issues of time. This chapter provides an initial foundation for researchers, designers,
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and instructors of online discussions to engage in temporally aware analysis and design. The authors begin with an overview of the general temporal characteristics of online discussions and the analytic considerations they raise in terms of timescales, data aggregation, and units of analysis. They then use the categories of Duration, Sequence, Pace, and Salience as a framework for unpacking the temporal aspects of online discussions in more detail, providing guidance for designers and instructors to manage temporal challenges and harness temporal opportunities. The authors conclude with a call for greater theorization of temporal properties, processes, and their effects on learning to support more informed analysis and design of online discussions.

INTRODUCTION

From their inception, online learning initiatives have navigated a space of tension between the opportunities technology provides for individualization of the learning experience and those it affords for facilitating interactions among learners. Supporting learning at “anytime and anyplace” while also enabling possibilities for collaboration and community-building is challenging indeed, especially when the former encourages diverse patterns of temporal engagement while the latter requires coordination across them. In this demanding context, asynchronous online discussions have emerged as an appealing way to couple learner independence with collaborative conversations. In other words, learners are able to engage in an educational experience both separately and together.

This bridging is possible in part because online discussions provide a communicative context with distinct, flexible temporal qualities (Hesse, Werner, & Altman, 1988). The core of all online discussions is the existence of a central message repository that persists over time. This allows learners to participate in a common conversation on their own schedule. It can also provide benefits not present in face-to-face discussions, such as extended time to reflect on others’ commentaries, develop one’s own and engage in the back and forth of conversation (Harasim, 2000). However, the looser coupling of individual participation timelines can also cause pedagogical challenges; for example the problem of disjointed conversations in which learners don’t meaningfully engage with one another’s ideas is a well-reported phenomenon (e.g. Guzdial & Turns, 2000; Thomas, 2002).

Because the temporal characteristics of online discussions play a central role, in both their promise and peril, analyses that take such elements into account are critical for generating understanding of how learning does (and does not) take place through online discussions. Similarly, effective design of online discussions requires actively planning for the temporal aspects of discussion activity. However, despite the importance of temporal considerations for online discussions, the majority of
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