

**Lotman's Semiosphere: A Systems Thinking Approach
to Students' Meaning-making Practices with Digital
Texts**

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Abstract

This thesis is concerned with Lotman's concept of semiosphere and its relevance to systems thinking in education. It examines the dialogue between education, digital technologies and society exemplified in students' meaning-making practices with digital texts in the UK secondary school Science classroom.

The thesis has four aims: to theorise a systemic approach to the conceptualisation of semiosphere; to develop a semiospheric framework for systemic analysis; to explore how this framework can be applied to technology-mediated learning in UK schools; and to consider the implications of this framework for educational systems design.

The thesis draws on the Lotmanian and semiospheric literature on the study of culture as an integral system. This literature is used to develop a framework for semiospheric analysis. I call this the Semiospheric Analytical Framework. This framework provides a systemic conceptualisation of Lotman's semiosphere on three levels: *Semiosphere*, *Cultural Text*, and *Semiospheric Text*. Six sub-concepts are also identified: *core*, *periphery*, *boundary*, *dialogue*, *translation* and *explosion*. The analytical utility of the framework is evaluated in an empirical study which focuses on students' meaning-making with digital texts in the secondary school Science classroom. The emergent themes of *boundary-setting*, *boundary-crossing* and *boundary-blocking* in students' negotiation of disparate sign systems (e.g. the Science classroom and the World Wide Web) are identified. The implications of these themes for an understanding of the dialogue between education, digital technologies and society are explored.

The thesis demonstrates that the conceptualisation of culture as a semiospheric system offers a useful method for analysing the complex dialogue between education, digital technologies and society. It further suggests that, whilst students' meaning-making practices with digital texts in the school setting have the potential to transform teaching and learning, the 'reculturing' of school systems is, above all, a socially-shaped endeavour.