education review // reseñas educativas
editors: gene v glass gustavo e. fischman melissa cast-brede

a multi-lingual journal of book reviews

November 30, 2010 ISSN 1094-5296
Education Review/Reseñas Educativas is a project of the National Education Policy Center http://nepc.colorado.edu

Sørensen, Estrid (2009). *The Materiality of Learning: Technology and Knowledge in Educational Practice*. Cambridge, UK: Cambridge University Press.

Pp. 224 ISBN 9780521882088

Reviewed by Ting Yuan
Teachers College, Columbia University

The author, Estrid Sørensen, is a Research Associate at Humboldt University in Berlin. She is also an Associate Professor at the School of Education at Aarhus University in Demark. Sørensen explores critical concepts that emerge from the intersections of material, learning, and education by taking a post-humanist stance to look at the materiality of learning. Departing from an ethnographic study of how new technologies in a 3D virtual environment project and traditional classroom materials took place in a Danish fourth-grade classroom, Sørensen challenges the mainstream human-centered mentality in studying learning in contemporary social, psychological and educational research and offers a novel perspective to re-conceptualize learning—how digital and traditional learning materials participate in and influence the dynamics of learning in educational practices. This book is

Citation: Yuan, Ting. (2010 November 30) Review of *The Materiality of Learning* by Estrid Sørensen. *Education Review*, *13*. Retrieved [Date] from http://www.edrev.info/reviews/rev1002.pdf

a dense conceptual piece with critical reviews of studies in areas of science, technology, and education. It is divided into six chapters with each chapter concluded with a summary. It is arranged in a back-mapping way. Sørensen takes us on a reading journey consisting of an introduction of the study, the concepts of material and materiality, the spatial approach taken by the study, as well as what counts as forms of technology, knowledge, and presence, while keeping us curious about the definition of the materiality of learning, which is saved for the last chapter.

Chapter 1 gives an overview of the methodology of studying the materiality of learning which is "not social but socio-material" (p. 5). Instead of viewing technology as a conventional problem-solving medium, Sørensen brings up the question of what roles the new classroom materials (in the form of technologies) and traditional learning materials can symmetrically play in influencing learning and how they further shape the varieties of *knowledge* and *presence* in school settings. In this chapter, Sørensen introduces three foundational concepts: *participation*, *performance*, and *imaginary*, for understanding the formation of the materiality of learning in the following chapters. First, the meaning of *participation* is expanded from personal participants to participants as nonhumans and to the occurrences of and relationships within participations. Second, *performance* is viewed as both a "verb" and a "noun" which represent "the preexisting reality, the text, and the approach, together forming a socio-material assemblage" (p. 16). Finally, the concept of *imaginary* challenges the taken-for-granted notion of human-dominated inter-relations in material-embedded learning contexts, which further leads to *spatial imaginary*, a notion of sensitivity to how human and nonhuman participants connect to each other and what spatial arrangement is accordingly established.

Chapters 2 in a detailed way demonstrates the creation of the Femtedit project, the virtual environment constituting the ethnographic study. Instead of simply gathering de-contextualized "stable singular tools" (p. 32), Femtedit is viewed as "careful associations of otherwise disparate parts" (p. 38) and developed by interactions among its social and material components which Sørensen portrays as a socio-material network. In the concluding summary,

material is referred as a tangible nonhuman entity, while *materiality* is given an initial definition as "the achieved quality of a hybrid that allows it to relate to other parts" (p. 61).

Building on the discussions in the previous chapter, Chapter 3 moves us closer to three core notions of a methodology of the materiality of learning: *materiality*, *multiplicity*, and *spatiality*. From *relational* to *spatial*, *materiality* is further defined as a network of mutable patterns of relations guided by "a spatial approach that focuses on the patterns performed through relations among parts" (p. 70). Sørensen explains that such web of relations contains any type of materiality ranging from human to nonhuman. In this chapter, Sørensen also highlights the connections of the spatial approach to studies on children's places and spaces. Sørensen argues that a technology is *multiple* as represented by its fluid spatial networks. She concludes with a discussion on the postmodern approach that while postmodernism embraces plurality of perspectives and interpretations, the part of materialities is missing: "plurality applies not to the objects interpreted but to the interpretations of them" (p. 85).

Chapters 4 and 5 shift from the 3D virtual environment of the study to traditional learning materials in the classroom. Under the umbrella of the spatial approach, Sørensen presents analyses of observation field notes and compares them with the data from Femtedit. In Chapter 4, from examining the patterns of relationships among participants, Sørensen raises three emerging ontologies of knowledge: *representational knowledge*, *communal knowledge*, and *liquid knowledge*. While the former is restricted by stability and boundaries, Sørensen contends that the latter two are produced from ongoing processes of mutation of materials and interactions, without boundaries between human and nonhuman participants. Thus, knowledge is formed through spaces of network performed by varieties of participants. Sørensen then in Chapter 5 discusses forms of presence which are performed within spaces consisted of different materials, investigating "the ways in which the humans involved came to participate in different ways due to the involvement of different technologies" (p. 11). As indicated by Sørensen, the performance of presence happens concurrently with that of

learning, and human participants need to be entangled in the spatial formations during educational practices. The definition of the materiality of learning is released in Chapter 6, which "concerns how learning connects to other entities" (p. 177) and is about "the achieved ability of a growth in knowledge to connect to other entities" (p. 193). This chapter ends with a discussion of core sensitivities leading to spatial formations.

This book centers on a new theoretical idea based on an ethnographic study comparing virtual environment components and traditional learning materials in a primary classroom. The work is inspiring as it initiates an important discussion on the roles of technology can play in learning. It is also powerful as it will probably invite more future inquiries into this topic. At a time when schools are increasingly integrating technologies into classroom curricula to meet students' needs in the contemporary digital age, this book offers educators and researchers a new understanding of the patterns of relationships among various human and nonhuman participants in learning. Meanwhile, as I read it from a literacy perspective, I also see that it resonates with Lankshear and Knobel's (2007) ideas on viewing technology as "new ethos" for creating immersive learning experiences rather than "technical stuff" for problem solving or enhancing conventional classroom literacy practices. The book further conveys that evolving selections or designs of appropriate digital technologies which constitute the fluid network of future learning need to be carefully considered in the processes of experimentation by educators and researchers interested in this area.

There is one aspect missing from the book: while terms related to the materiality of learning are addressed throughout the book, the definition of *technology* is left out. In describing a recent history of technology in the first chapter, the author makes an implicit assumption that *technology* is tangible, like the *material*. However, the definition of technology needs to be clearly addressed since it has both tangible and intangible meanings in history. For example, in Plato's dialogue the *Phaedrus*, he depicted alphabet as a *techne,* the Greek root of *technology* which means an art, a craft, or a set of rules (Bolter, 2001). Clarifications of what counts as technology can

further help readers better understand *material* and *materiality* in this book.

To sum up, I applaud the author who takes the lead to bring a different voice into material and learning as well as pushes forward such much needed conversations about re-conceptualizing the roles material can play in learning. This book denotes a powerful move in igniting or enlightening future discussions in this topic.

References

Bolter, J. D. (2001). *Writing Space: The Computer, Hypertext, and The History of Writing*. Hillsdale, NJ: Lawrence Erlbaum.

Lankshear, C., & Knobel, M. (2007). Sampling "the new" in new literacies. In M. Knobel & C. Lankshear (Eds.) *A New Literacies Sampler* (pp. 1-24). NY: Peter Lang.

About the Reviewer

Ting Yuan is a doctoral student in the Department of Curriculum and Teaching at Teachers College, Columbia University. Her research focuses on young children's digital literacy practices and the integration of technology into school curriculum. Ting attended East China University of Political Science and Law, Shanghai, where she majored in English and minored in Law. Before her doctoral research, Ting had two years' working experience in an international law firm and three years' English teaching experience in Shanghai.

Education Review/Reseñas Educativas is a project of the National Education Policy Center http://nepc.colorado.edu

Editors
Gene V Glass
glass@edrev.info
Gustavo Fischman
fischman@edrev.info
Melissa Cast-Brede
cast-brede@edrev.info