BOOK REVIEW

Activity Theory, Authentic Learning and Emerging Technologies:
Towards a Transformative Higher Education Pedagogy

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Those of us who teach at institutions of higher learning are living in the midst of a technological paradigm shift as we contemplate the move from an educational world once dominated by chalk and talk to one now becoming immersed in a mosaic of Emerging Technologies (ET). Examples of these technologies include Facebook, Google Hangouts, Twitter and a myriad of other digital tools that our students, the new digital citizens, understand and use with better comprehension and facility than we traditional educators do. In addition to this ever widening digital communication divide between teachers and learners comes pressure from school administrators to adapt teaching methods to the variegated needs of World Wide Web enlightened students. Added to all of this come university budgetary pressures with the mantra of faster, better, cheaper, and higher productivity. As a result of such technological, social and economic changes, higher education institutions are calling for more and better use of new learning tools for the curriculum. Most professors are masters of their teaching craft be it in accounting, medicine, botany or topology, but much less so masters of newer instructional methods and emerging technologies, and it is this

educational and learning gap that the book *Activity Theory, Authentic Learning and Emerging Technologies: Towards a Transformative Higher Education Pedagogy* addresses so skillfully, both in theory and in practice.

This work, edited by Bozalek, Ng'ambi, Wood, Herrington, Hardman and Amory, is not a simplistic cookbook with recipes that dish out, cafeteria style, Emerging Technologies to students, but rather a well-organized collection of 16 chapters with contributions from 43 scholars, who present three fundamental pillars in a new equation for understanding transformative learning: Activity Theory (AT), Authentic Learning (AL), and Emerging Technologies (ET). Full chapters for each of these three areas are presented to give a solid historical, conceptual and theoretical picture to the reader. These major themes AT, AL and ET are then reconsidered operationally in follow-up chapters which give a refreshing abundance of case study applications of the principles. Thus, the reader comes to a full understanding of just how theory is related to practice. Later, in the last three chapters of the book, an additional 13 case studies, which may be called mini-cases, present even more concrete applications of the theoretical constructs of the book. Teachers of any academic field, who are starting to use, or who are planning to increase their use of emerging technologies, will appreciate this book's useful interweaving of theory and practice.

The theoretical core of this edited collection is Activity Theory, and the authors of the AT chapter, Joanne Hardman and Alan Amory give a good historical and contemporary account of what is called CHAT, the Cultural-Historical Activity Theory. They start with the social constructivist work of Vygotsky, and show how higher order cognition comes not from the direct working of the subject on the object or objective, but rather from the mediation of psychological and material tools which are social in origin. From Vygotsky and his first-generation CHAT, the authors move to the second- and third-generations, with Leontiev and especially, Engström, who develops a more complete model that serves as the unit of analysis for many of the following chapters in the book. In Engström's Activity System, the notion of Rules, Community, and Division of Labor are added to the more basic Subject-Tool-Object model of Vygotsky. In later chapters, the reader sees how the theoretical AT model is used as an analytic framework in a dozen different applications including courses in architecture, education, funding proposals, web-site accessibility compliance, mathematics teaching, anatomy, and industrial design.

Another fundamental part of this book deals with Authentic Learning as presented by Jan Herrington in an outline of nine main elements of what constitutes the application of knowledge to real life contexts. Here we have an echo of the Deweyan pragmatic and progressive view of education as life. Most traditional teachers will quickly get a good intuitive sense of how to apply Herrington's principles of AL to their own courses. Succinctly stated these authenticity elements include: authentic context of use; authentic tasks; access to expert performance and the modeling of processes; multiple roles and perspectives; collaborative construction of knowledge; reflection; articulation; coaching and scaffolding; and authentic assessment. As in the chapter on Activity Theory, Herrington presents a framework that will serve as a heuristic for a complementary analysis of most of the case studies in the book. Thus, once again, the conceptual parts of the book are brought to life with clear, concrete case studies. For example, with the AL principle of *articulation*, which is related to the public presentation of a student's work, we glean specific examples from a case study dealing with an undergraduate research methodology course, where students "articulated" by engaging in online discussions, by participating in group sessions with writing coaches, and by delivering a final presentation of their work with a follow up debate.

Permeating the entire book is the question of just how new Emerging Technologies are related theoretically and pragmatically to the CHAT and AL frameworks. Indeed, the third pivotal chapter, entitled *Introduction to Emerging Technologies* by Dick Ng'ambi and Vivienne Bozalek, gives a much needed discussion in academia of how these new digital tools can be

integrated into both Engström's Activity Theory, and into Herrington's pedagogical model of Authentic Learning. Mediated learning with cognitive and material tools is at the center of this discussion, as it is these very Emerging Technologies that serve as the new tools of society that work to create the new minds of the students. Emerging Technologies, as the authors point out with 1) *Gartner's Hype Cycle for Emerging Technologies*, and with 2) Veletsiano's five major characteristics of such digital tools, must be understood as unknown values in the educational equation. While educators often hear glowing reports of the power and effectiveness of these teaching instruments, in reality no one really knows just what their value is for effective learning. First as Gartner points out, the utility of these new learning tools is often very exaggerated, hence the term *hype*, and second, as Veletsianos notes, technologies are in a state of flux, are not yet understood nor researched, and are present in differing degrees in different contexts, for example the technology may be readily available in developed nations but nonexistent in developing ones.

Besides giving the reader a balanced approach to the use of Emerging Technologies informed by both the theoretical framework of Activity Theory, and by the pedagogical approach to Authentic Learning, this book also shows the reader a perspective of technology usage from the *Southern* Hemisphere. Indeed, all of the book's case studies deal with cultural contexts set in South Africa, Australia and New Zealand. Thus, the reader gains new insights about what can happen when a new technology meets up with, for example, the aborigines of Australia, or with one of the eleven major language group speakers of South Africa. By relocating the venues for the pedagogical applications of Activity Theory, the editors help those of us in the academic worlds of the United States and Europe to think outside of our parochial pedagogical boxes.

Many sectors of academia will find this book useful. For the reasons noted above anyone involved in instructional design, educational technology or curriculum planning can profit from the authors' clear and coherent presentation of AT, AL and ETs. The book may be informative also for non-higher education contexts such as for high school and for lifelong learning and adult educational course development. The book makes a good read for non-tech savvy professors and lecturers of a wide variety of disciplines who are starting to consider applying Emerging Technologies in their classrooms, but who are unsure of the theoretical and practical perspectives on these digital instruments. On the other end of the spectrum, the techno-enthusiasts with little background in education will find this book useful to help them understand just how important it is to know cultural, historical, and authentic learning notions for the successful implementation of any new teaching technology.

To get the most from reading this book, it would be wise for the traditional chalk and talk teacher to have prior hands-on experience with at least a few of the Emerging Technologies. The list of such digital tools and technology-related platforms in this edited work is very long, well over 50, including the well-known Facebook, Google Docs and LMS (Learning Management System) such as Blackboard, but also encompassing a very large number of recent digital innovations largely unknown to the traditional educator: 3DVW, Second Life, Diigo, WhatsApp, Posterous, Surveymonkey, Wordle, Mindmeister, OpenSim and many others. Several of these platforms are variations on a theme, and it is useful to consider the advantages and disadvantages of using one or more *types* of these tools, for example, to build a digital repository of relevant course information in the cloud via Diigo, or WikiSpaces, or even Facebook.

Most though not all of the book's contributors use Activity Theory as an analytical framework for their case study applications. In a distinctly different approach, however, Cochrane, Narayan and Oldfield, who have extensive experience implementing coursework with Mobil Social Media, show why they feel that AT is not as practically useful as their own Critical Success Factor (CSF) criteria, as applied on a pedagogy-andragogy-heutagogy (PAH) continuum. CSFs may include, to give an example, elements such as the matching of the appropriate mobile

device (mobile phone, tablet, iPad, etc.), and the PAH may be conceptualized as teacher-directed learning (pedagogy), teacher-facilitated adult learning (andragogy) and self-regulated learning as in doctoral research (heutagogy). The reader will benefit from considering the work of Cochrane et al. as a fourth pivotal chapter of the book, and one which contributes, by way of contrast, to a more profound understanding of just what Activity Theory, Authentic Learning and Emergent Technologies really mean to modern education.

And to finish with a coda, in this excellent collection of well-organized chapters where theory and practice produce an academic harmony with a few contrasting but not cacophonous notes of Cochrane et al., the reader will still want to ask one disquieting and discordant question: why such a headlong rush on the part of many institutions of higher learning to adopt very new, yet often very questionable emerging technologies? At the behest of whom? In terms of the economist, "Who is fomenting the substitution of capital for labor, of machines for teachers, of Emerging Technologies for professors and adjuncts? It may be instructive to compare a previous surge of technology into the world of teaching: that of the language laboratory of the late 1950s and early 1960s. Behind the explosive growth of such labs were well-oiled sales and marketing machines of the then high-tech enterprises peddling their wares based on the illusory hopes of distant administrators and school boards, not of experienced, front-line foreign language teachers. Notwithstanding this rather troubling, for techno-enthusiasts, historical example, there may be good cause to put more hope in today's hype especially when we look at the southern hemisphere examples of this excellent book, where in many cases, such as in mobile phones and social media, pedagogical materials are costing less and less, and power is distributed more and more.