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## Highlights from Syllabus Magazine

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### Telecommunications and New Learning Paradigms

*Beyond Education: The Age of Transaction and the "Scene" of Digital Learning*  
By Carl Raschke, University of Denver

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**The current knowledge revolution renders obsolete what less than a decade ago was called "educational reform."** The crux of educational reform has always consisted in retooling the instructional institutions of a society to meet new goals, satisfy collective desires and expectations, or mobilize economic and intellectual resources in a different strategic fashion.

Waves of educational reform usually accompany periods of wholesale social change. The development of "progressive education" earlier this century was a response to rapid industrialization and urbanization. The preoccupation with science and mathematics in the late 1950s and early 1960s grew out of national anxiety about the expanding military power and global political influence of the Soviet Union. The changes now underway, however, are of a sizably different order. Whereas the education reform movements of the past did not alter the basic social infrastructure in which knowledge was created, the current revolution involves a transmutation in the way in which the world is experienced in its entirety.

During the last reform cycle social consensus seemed to support the notion that teaching was the "highest good" in the educational universe. In one sense the exaltation of this value was an upshot of the cultural upheavals of the Sixties. The student riots in Berkeley during the early portion of that decade were in protest to the impersonal character of higher education. A consensus somehow emerged that the business of the professoriate was not to engage almost exclusively in private research, but to do something that took on a mystical connotation of its own - "teaching".

Interestingly, the push to reinstate the role of teaching was never matched by an equally fervent curiosity about the quality and tenor of learning. The covert assumption was that good teaching automatically begets learning. The assumption was always a sort of Protestant presumption, ie., sound preaching inculcates righteousness. In effect, the preoccupation with the promotion of teaching during the most reform period may constitute the last hurrah of the "Protestant principle" in education.

#### A "Copernican Revolution"

As the trend toward digital instruction gathers force, a kind of new "Copernican revolution" can be discerned. Just as Copernicus redefined astronomy by positing that the earth circles around the sun, and not the other way around, so the new educational theory suggests that the generation of knowledge must be pegged to the conditions of the learner, rather than the genius of the instructor. The revolution is about "learning", not "teaching." This dictum will most likely cause untold consternation among generations of educational reformers who have learned to intone the seemingly self-legitimizing mantra that the business of education is teaching, and that the reward and encouragement of good teaching will somehow yield a more knowledgeable and learned society. One of the difficulties with this well-nigh sacred doctrine is that no one has ever come near to agreement on what signifies good teaching.

Of course, we need to attain some clarity concerning what the terms "teaching" and "learning" mean with respect to the philosophy of education. As it turns out, these words are somewhat loaded, and carry with them varying connotations, and are to a certain degree, though not exclusively, culture-bound. The history of

civilization harbors various paradigms of teaching and learning, as well as assumptions about how the two functions link to each other. We can distinguish five general and operative paradigms that still affect us today.

The first paradigm of teaching and learning is what I will call the *mandarin*. The mandarin model harks back to the imperial courts of China. In the mandarin view the principal purpose of teaching is *transmission* of ancient cultural norms, practices, and values. Rote instruction, including extensive memorization and mastery of select skills such as reading and calligraphy, dominates over the use of any kind of critical intelligence or inquiry.

The second is the *academic*. By "academic" we do not have in mind the broader use of the term in the popular lexicon. We are referring to the technical denotation of the word as it derives from the ancient Greek academy in Athens. The academic paradigm is the cornerstone of the modern idea of a "liberal arts" education. It focuses on the self-development of the learner by means of a challenging and charismatic role model in the person of the teacher. In the academic model the role of teaching is to produce, as the cliché goes today, "lifelong learners. It is the converse of the mandarin, in the same way the Athenian democracy that spawned it is the historical antithesis of the great Oriental empires with whom it often contended. Despite aspirations to make the academic paradigm a benchmark for educational reform in the Western democracies, so-called "liberal learning" has always been, and will remain, a luxury for social elites in a democratic culture. The third model we shall call the *clerical*. The clerical paradigm is quintessentially Western, which encompasses the world of Islam, and reflects the historical role of religious hierarchies in shaping secular institutions from the Caucasus to the British Isles. According to the clerical paradigm, the goal of instruction is to inculcate in the student the kinds of beliefs, values, and moral practices that will demonstrate that they are, first, worthy of eternal salvation and, second, capable of living a virtuous and socially productive life. Practical knowledge and skills are important in the clerical paradigm, but they always remain subordinate to concerns about one's eternal destiny.

The fourth is the *industrial* model. Until recently the industrial model was the prevalent type of educational arrangement in the West as a whole, and in the United States specifically. The industrial model is the organizational touchstone for most of American education, including K-12 schooling, community college systems, and the so-called "comprehensive" or "land grant university." The industrial model was first developed in the late nineteenth century in imperial Germany and was imported immediately into the United States by homegrown educational reformers. The industrial model emerged as advocates of a strong nation-state and a capitalist economy discovered that workers at all levels must be increasingly equipped with scientific and technical know-how in order to sustain social innovation and economic expansion.

The fifth paradigm is something quite different from the industrial model, even though there are many in the corporate world who would like to make digital a form of corporate regimentation. It is what we shall call the *transactional* paradigm. One might expect that we would use terminology that was native somehow to the language of digital culture - e.g., "informational" or "cyber-" paradigm, but these terms bespeak more the appearance rather than the substance of what is actually taking place at the level of education with the third knowledge revolution.

### The Transactional Paradigm

In the abstract the transactional paradigm of teaching and learning could have evolved without the invention of the personal computer, and it may become the dominant regime of education long after the PC with its keyboard, operating system, software, and network connectivity is a relic of the past. For example, the industrial system itself was originally propelled by the arrival of the steam engine, but later discarded the energy of vaporization as its material basis. Likewise, PCs may one day become nothing more than electric, or even optical, units of intelligence in every device that intrudes into our lives.

In the transactional paradigm teaching and learning are no longer separate activities, or even abilities, in the generation of knowledge. The universe of transactional learning is no longer bi-directional, but multi-polar with the numerous ripples and eddies of intellectual experience roiling about that center of investigative activity we call the "learner." In fact, it delimits a new "learning space" itself. By learning space we mean the total context, or set of conditions, within which learning at a particular juncture takes place. Because this new learning space transcends the bi-polar relationship between teaching and learning, it abolishes all former educational paradigms that have dominated in the past. In perhaps more than a simple metaphorical sense, it signifies the "end of education" as the word has been used historically.

Heretofore the learning space of a typical class could be characterized by a teacher in front of a group of

students, who listened, took notes, and asked questions. In a "distributed learning" environment the learning space is considerably different. It can be classified as a complex and constantly shifting set of queries and responses on the part of both instructor and student. This perpetual give-and-take between teacher and learner renders the distinction between "educator" and the "educated" less significant. The word we propose is "transactivity."

Transactive learning upends the very distinction between teaching and learning as it has lodged in our understanding. In the past teaching and learning were viewed as specific, but separate, activities. Each activity, in turn, could be understood as having been performed by a singular "agent." By and large the former was regarded as active, the latter as passive. Transactivity means that the functions of "teaching" and "learning" take place simultaneously in both agents, formerly designated as instructors or students. Transactive learning is the term most appropriate to the learning space of a digital culture with the contours of a "world wide web." It points not to the emergence of a new learning "infrastructure" but to what John Gehl call its "metastructure" - a rethinking of the complete "why" and "wherefore" of learning.

Broadly speaking, we can see that the learning spaces that have dominated in each of the historical paradigms mentioned have reflected a conventional learning culture centered on *control of the classroom by the instructor*. Even the Socratic model with its stress on self-discovery and non-directive inquiry requires a kind of "sage on the stage," or a "star in the seminar." At the most fundamental level all teaching and learning paradigms preceding the age of transaction were "authorial", insofar as they were focused on the instructor both as the "authority" within a particular discipline and as the originator of all academic content within the learning space.

The proliferation of transactive learning spaces in the age of computer-mediated education signifies that control of the content of curriculum must give place to an explosion of self-crafted, ad hoc, and customized learning modules, where the great historical divide between instructor and student can be found in a state of meltdown. For more than one generation now developmental psychologists have been telling us that the play of children is an imaginative simulation of sophisticated learning initiatives. Transactive learning is not "play" on the conventional sense of the world, but it exhibits the freedom and self-tutoring through immediate feedback that juvenile behavior embodies.

Digital culture by its very character involves constant experimentation and exploratory activity. The infinite web of files and hyperlinks that constitute the "internet" activates this movement of exploration. We are witnessing what one analyst of media culture terms a "paradigmatic shift from linear text to overall pattern ... fretted with radical epistemological, pedagogical, political, and organizational consequences." Whereas traditional book-based curriculum was by its very nature passive and therefore required authorial intervention, the new spaces of digital scholarship are wide-open and undulating spaces. Digital scholarship is truly the "final frontier" of knowledge for this very reason.

### Digital Scholarship and the New Scene of Knowledge

Digital education points not only beyond education, but beyond pedagogy itself. The dynamism of an enveloping transactive, digital society ensures that, in the words of the French postmodernist philosopher Jean Baudrillard, that "the real scene", in which carry out our parts, and where "you had rules for the game and some solid stakes that everybody could rely on." has been lost. Instead of familiar, but ultimately inconsequential talk about "reforming education", "transforming the classroom," or "digitizing" the profession of teaching, perhaps we would be better served with language that connotes redescribing the "scene" of knowledge. The word "scene" is useful here because it carries the force of both a social locale of recurrent action and a moment in history itself. The French phrase *mise en scene* furnishes some of those connotations. If transactivity defines a special learning space for what we have conventionally called "instruction," then it also identifies what we may dub the new millennial *scene of knowledge*. It is a scene where the walls of the stage are invisible, and the boundary between performance and audience is technically erased.

The scene is increasingly reversible. In the age of transaction there is a fluid, perambulating-back-and-forth-between the different sites of knowledge and understanding. Inquiry and discovery constitute a limitless spectrum, or "spectacle. *Curriculum becomes continuum*."

The age of transaction may not mean the "end of education" as we know it. Habitual structures, even amid the most tempestuous revolutions, have a strange way of abiding. But the scene of knowledge will fill most of the spaces of our lives. In the short haul the revolution at our door is about computers, browsers, connectivity with telecom systems, websites, internet relay chat, and learning with laptops instead of

textbooks. In the long haul it is about the dissolution of structures and the true freedom of the mind, a freedom that was impossible in the "age of education."

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Carl Raschke is Professor of Religious Studies at the University of Denver and currently Visiting Scholar at Rice University. He is the author, or co-author, of at least twelve books and hundreds of articles on subjects ranging from philosophy of religion and theories of culture to new technologies and society. He has been active for over a decade in educational reform movements involving digital learning.

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