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Hello, Convergence!

**What Is It? And What Does
It Mean For Our Future?**

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“Digital convergence obscures physical and temporal boundaries...”

Punya Mishra, Associate Professor,
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ings still prevail, making the idea of convergence both slippery and richer. This is a good thing, because dictionary definitions can sometimes be straitjackets, and digital convergence is different things to different people.

These different meanings of the term play out in different ways when we speak of digital convergence. There are shades of the biological idea of convergence, where different media and technologies develop similar features (your cell phone includes a camera while your camera may double up as an MP3 player). The mathematical idea of convergence, in the sense of a series of events adding up to a finite, manageable whole, highlights the manner in which this current talk of digital convergence is just the current consequence of media and knowledge coming together, which began thousands of years ago when people scribbled on cave walls. And of course, while the physiological definition reminds us that despite the wonders of technology, we need to focus our eyes inward, to reflect and think about the meanings and consequences of technological marvels.

However, the focus of this piece is not on biological, mathematical or physiological convergence. It is on digital convergence, and what it means for us as learners and educators. In this context, I would like to speak about three different kinds of convergence. The first is *digital convergence*, the kind of convergence that has received a great deal of attention lately (this special issue is a good example). This digital convergence is, for the most part, here already, which is maybe why we spend so much time talking about it.

Digital Convergence

The words *digital* and *convergence* taken independently or together are today's latest buzzwords. People have argued that this new world of ubiqui-

Technologies On The Verge...

Look up the word ‘convergence’ in the dictionary, and you will come across a range of meanings. My favourite is the reasonably useless definition that says convergence is “the act, condition, quality, or fact of converging.”

Huh? Other meanings and uses of the word are not quite as circular. For instance, in biology, convergent evolution means the adaptive evolution of superficially similar structures, such as wings in birds and insects. In mathematics, convergence is the property of approaching a limit, or as my friend Hartosh said, convergence is the way in which infinities can be controlled, captured and understood. In physiology—and this was something I didn't know—it is the coordinated turning of the eyes inward to focus on an object at close range (what in other words we would call being cross-eyed). And finally, convergence is a meeting place, a site where things come together.

Though digital convergence is often used to indicate the last of these definitions, the other mean-

ing and invisible computing, through small, relatively inexpensive devices that merge multiple media and communications technologies, will reshape the way individuals and organisations collaborate and share information.

Convergence in this sense of the term includes *content and application development* for film, video games, music, advertising, and mass media; *distribution*, including wireless, broadband, VoIP and more; *hardware*, such as cell phones, mobile devices, game consoles, and so on.

This digital convergence is often talked of in technological terms (such as my cell phone, digital camera or my gaming console). This emphasis on the technical is not surprising because there is still a lot of intricate and difficult work (regarding communication standards, interoperability, hardware handshakes and software bugs) that need to be configured and deciphered.



At the same time, this emphasis on the technical should not obscure the psychological, social and cultural aspects of these technologies. These technologies are reshaping the way individuals and organisations collaborate and share information. This digital convergence, in an important sense, removes, and maybe more importantly, obscures, physical and temporal boundaries that in the past served as impediments between individuals and the world.

When communication integrates, maps and borders have less meaning—if any—and barriers of distance begin to dissolve. In some ways these technologies of ‘action at a distance’ simplifies our lives, since it allows us to connect with the world in ways that we might not otherwise. It becomes the centre of our social network and constructs a ‘virtual space’ within which we live, learn and work.

Pedagogical Convergence

Living in the physical and social world—for both work and play—requires acquiring knowledge. To survive and thrive in these new social and physical spaces, new ways of learning that meet the demands of this new era will have to be developed.

The convergence of our strategies and theories of learning to live in this digitally integrated world is the second kind of convergence I am alluding to—what I call *pedagogical convergence*. This convergence deals with how our approaches to teaching

enhanced by irrelevant and pointless flash and fizz. We must remember that all the technologies in the world are of no use if they are to push the same old agenda. The language of pedagogy needs to rise up to meet the language of convergence.

I remember visiting a school in Nagpur and talking to the computer teacher there. The school did not think of using computers to learn science. They did not consider using computers to develop writing skills, though there is increasing evidence that using word processors actually makes students better writers and better thinkers.

Sadly, this is true of most schools today. So the constraints are not as much cost and access, though these are critical issues—rather a failure of our collective imagination.

A part of the problem is, given the fast pace of technological change, our learning theories and pedagogical approaches have often been engaged in a game of catching up. This is not to say that we don’t have a sense of what this pedagogical convergence will look like. The new pedagogical convergence is informed by thinkers such as John Dewey who urged us to base all educational strategies on the impulses of the child—the urge to communicate, inquire, construct, and express.

Some of these new understandings are inspired by the technology itself. Games and simulations, with their rich multi-player, immersive, interactive, social worlds are showing us the way to the future of

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and learning need to converge with the new trends in digital technologies.

Learning today can no longer be restricted to 12 + 4 years of schooling and college. Not only do we have more to learn, we need to do it more often and in less time. This puts severe stress on our existing pedagogical systems including schools, training workshops, colleges and universities.

Learning can no longer be limited to being able to recite multiplication tables by rote and such. Learning today is continuous, just in time and perpetual. This fast pace of change means that there is little time for leisure and reflection. Lifelong learning is not just an idle hope, but rather, the need of the hour.

What role can technology play in developing solutions to these problems? The first thing to remember is that education and learning is always about more than the technology. We must never forget that technology is a medium, a tool for converting ideas into action.

However, technologies do not force one set of actions over others. Technologies can be used for ‘old style’ learning as easily as for newer, flexible pedagogy. The technology does not care. In some sense it may even be easier to use technology to achieve ‘old style’ goals. This is why we often see the online course that is merely a set of static Web pages—a textbook moved onto the Web; or the naïve drill and practice programme, cosmetically

learning. The title of James Gee’s recent book says it all: *What Video Games Have To Teach Us About Learning And Literacy*. This is not to say that games and simulations are the only way forward. Not at all. Education is a multi-dimensional beast, and there is space for various genres and ways of doing—as long as they are thoughtfully implemented, and we resist being seduced by the shiny, sexy surfaces of technology and are prepared to peer deeper into their essences.

Deep Convergence

This brings me to the third and final kind of convergence, which for want of a better term, I call *deep convergence*. There are many people who pontificate on the social and cultural consequences of digital and pedagogical convergence. However, I take these well-meaning pronouncements with a grain of salt because forecasting often overestimates short-term effects and underestimates long-term ones.

One thing that humans do is construct new understandings of themselves, and the world they live in through using these media. As the Foresight group (<http://www.foresight.gov.uk/>) says in a report:

“At some point in our evolutionary past humans entered the ‘cognitive niche’ and fundamentally changed their relationship to the world around them and the rate at which they could develop their culture. The artificial world is about to do the same, with humans as partners in the process—the effects will be equally far reaching.”

What these new effects will be is hard to imagine. These new technologies allow us to imagine new worlds; to create new selves in this world. In some sense, this idea of digital convergence is the first step towards an unfolding journey that will spark other convergences, many of which we cannot even imagine at this moment.

One of the things that humans have done over the years, as new media have emerged, is play with their capabilities and constraints, and then used them to develop new ways of expressing themselves. These new expressions are ways of developing a deeper understanding of who we are as individuals, as groups (such as organisations or nations) or who we are as a species.

This is a different kind of convergence and is somewhat difficult to explain. Maybe the only way to do is through an example. The beginning of the twentieth century was a time of immense upheaval in our way of understanding our place in the world. In the arena of technology, those early years saw a range of inventions that forever changed the way we lived. These include the airplane, the radio receiver, neon signs, air conditioning, the vacuum diode, colour photography, motion pictures, crossword puzzles, zippers, tommy guns, insulin and the precursor to what we now call television.

And then there were the revolutions in science and art, from relativity theory to cubism, from quantum mechanics to surrealism. Within the space of a few years we moved from a worldview where time and space were absolute, to a relativistic, fractured, unstable one. This change in zeitgeist was reflected in the sciences as well as in the arts.

Consider the year 1922. This was the year that Einstein won the Nobel Prize, James Joyce published *Ulysses*, and T S Eliot published *The Waste Land*. This was also the year that Picasso designed the sets for a ballet performed by Diaghlev and scored by Stravinsky, the debut of which was attended by the likes of James Joyce and Proust.

This kind of a convergence is larger, deeper and more fundamental than the other convergences I have discussed above. In some fundamental way, these convergences, developed a century ago, still define the world we live in today.

It would be foolhardy on my part to even attempt to make predictions about the nature of deep convergence that will emerge from the technological changes happening around us today. Not the least because the effects of technology on society, and of society on technology are complex and multi-threaded. Simple cause and effect relationships are difficult to trace.

Moreover, thinking of such deep convergences can also be risky. At the heart of the word convergence is the word 'verge' with its connotations of being on the edge (as in the leading, or as others say, the bleeding edge).

Being on the verge, or at the edge, is to be somewhere unstable and unpredictable, and this instability can be nerve-racking. There is also a sense of excitement, mingled with fear, mystery and anticipation. There is a realisation that decisions we make today will have ripple effects and consequences, both intended and unintended, far beyond what we can imagine.

The era of digital convergence that this special issue justly celebrates is the culmination of thousands of years of biological and cultural evolution, even as it is the first step in an unfolding process that will yield its fruits in the years and decades to come. ■

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