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Harnessing the Power of Innovation in Distance Education

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Thank you for that very warm welcome. I am indeed excited to be here in Fortaleza…with such a distinguished and accomplished group of scholars and educators…to further our collective vision for distance education.

As the 21st century moves quickly toward the end of its first decade, we find ourselves living in a world that is far less concerned about who you are, than about what you know and how well you can use it.

In this new world, knowledge is power and continuous access to higher education, an economic necessity…at a time when we must constantly sharpen our skills…and even reinvent our career lives…to keep up with the rapid pace of innovation.

Even more compelling, as our planet becomes flatter, and our global village, larger, postsecondary education has taken on an even deeper meaning, as the basis for promoting a future that is environmentally, socially, and economically sustainable.

Indeed, we look to colleges and universities as greenhouses of innovation and communities of promising practice…for developing the groundbreaking technologies and critical alliances we will undoubtedly need…to solve problems that do not even exist yet.

Not surprisingly then, every nation…whether large or small, developed or developing…has come to view higher education as both the engine of national opportunity and the passport to global participation.

And with the advent of digital technology, we can now power that engine and supply that passport…by achieving unprecedented access to world-class academic programs and services…for learners of all ages and abilities…ethnicities and economic circumstances.

What's more, these technologies afford them the freedom to move in and out of the learning environment…at different times…in different places…and for different reasons.

In fact, students everywhere are trading the campus for the computer…logging on to courses at all hours of the day…exchanging emails with their instructors well into the night…and connecting with classmates whenever and wherever the need arises.

Likewise, distance educators in every part of the world are preparing for those courses…answering those emails…and ensuring that those connections are successfully made.

Yet as they evolve, these very same technologies provide far more than merely a platform *from which to teach*. They offer an extraordinary medium *through which to learn*…enabling us to engage students and faculty alike in active, collaborative, and authentic knowledge creation and application.

So why is this important?

Because research has demonstrated time and again that the act of learning is more than simply a matter of information transfer. It is a process of dynamic participation…in which we cultivate new ways of thinking and doing through discovery and discussion…experimentation and reflection.

Nowhere is this more important than when it comes to preparing our students with the skills they must have to succeed in today's global economy…with its focus on information and knowledge…connectivity and communication. Skills they cannot easily acquire on their own.

For instance, the capacity to discern and disseminate relevant information, along with the judgment to ensure its reliability and the knack for synthesizing it across multiple modalities. And the ability to apply new knowledge, while also negotiating across disciplines and cultures to generate innovative solutions to real-world problems.

That said, distance education is about so much more than merely choosing delivery platforms, converting coursework, and generating materials. It is about harnessing the power of innovative technology to create rich learning experiences…dynamic learning environments…and vibrant learning communities. All for the purpose of overcoming what one American scholar in the field calls *transactional distance.*

Michael Moore…a prominent distance educator from Penn State University…theorizes that the physical separation between student and

instructor…inherent in any distance education setting…leads to inevitable miscues and misunderstandings between them.
So to bridge the divide, teachers must choose pedagogies, structure learning environments, and develop learning activities in ways that are significantly different from the face-to-face environment.

That means moving away from teacher-directed pedagogy to embrace a far more learner-centric approach…thus responding more effectively to what students *need* to learn, rather than offering only what professors *want* to teach.

It also means structuring distance education courses and classrooms around active learning rather than passive instruction…while providing ample opportunities for students to interact…with the content, with their instructors, and with each other.

But achieving these objectives requires careful planning and effective delivery…within the context of a systems perspective…to ensure both the academic quality and the economies of scale essential to realizing our objectives.

It is the approach we helped to pioneer nearly 20 years ago at my own University of Maryland University College…one of the first universities worldwide to fully embrace the concept of online distance education…as a valuable addition to face-to-face delivery.

Like any working system, the distance learning organization includes certain subsystems or components…along with a well-defined management process for connecting them effectively.

At UMUC, our virtual campus development began with a clearly explicit institutional commitment, which was not only broadly transformative, but also politically driven from the top down…with both academic leaders and faculty members closely involved in the effort.

Since then, we have created both the institutional structures and the institutional policies necessary to embed online delivery across every discipline, department, and division within our larger university system. That said, distance education has become an integral part of everything we do…from planning academic programs and recruiting appropriate faculty…to evaluating quality and prioritizing resources.

And to create synergies among all the individual units that support online education, while ensuring that online offerings meet the highest academic standards, UMUC established its Office of Distance Education and Lifelong Learning – or ODELL. As such, ODELL coordinates the university's 360-degree quality assurance program…used to measure the extent to which our online students successfully meet their academic goals.

With this in mind, we have taken a number of important steps to strengthen our focus on student learning outcomes; faculty teaching effectiveness; curriculum and program development; service provision and operational efficiency; and institutional integrity. Moreover, UMUC uses standardized benchmarks and mechanisms to evaluate progress in each of these areas and provide immediate intervention when failures occur.

Of course, every good distance education system begins with sources of knowledge to be taught and learned. At UMUC, we choose these sources after thoroughly scanning the professional environment…to determine both what the market demands and what our students feel they need.

For instance, in the aftermath of the September 11th terrorist attacks, U.S. governments, institutions, and businesses alike began seeking ways to protect their online informational systems and assets. So we tasked one of our professors, Dr. Jim Chen…a highly respected scholar-practitioner in the field of information technology…to determine exactly what the challenges were and how our university might help meet them.

Several months later, Dr. Chen came back with a plan to create a specialized program in information assurance…which quickly became and continues to be one of our most popular online academic offerings.

Open Educational Resources…or OER…offer yet another cost-effective way to generate new sources of knowledge…especially for fledgling distance education systems. These resources furnish open and free access to high-quality digitized learning content and teaching materials, as well as the means with which to implement them locally.

While building on the model developed by open source software designers, colleges and universities…led by such icons as MIT and Cambridge University... are working together to develop high-quality educational content and make it freely available to others. Yet early studies have shown the these resources are not necessarily used to their best advantage, because of

problems with technology transfer; fewer than optimal production outlets; and a lack of well-conceived business models.

However, by studying such successful open source projects as Linux, Apache, and Wikipedia, I believe we will actually discover more effective ways of producing and distributing OER in a way that is more adaptable, pervasive, and collaborative. We may then override intellectual property concerns…pave the way for producing knowledge-specific content, as needed…and promote new communities of production.

Once we have determined *what* we will teach, we must then decide *how* we will teach it. And that requires yet another subsystem for assembling content into courses…which are designed to promote successful learning.

In traditional classrooms, faculty members develop and deliver their own courses…striving to wear many hats at once…as successful communicators, curriculum designers, learning evaluators, motivational coaches, discussion facilitators…and, obviously, content experts. To be sure, very few of us can successfully wear all of these hats...and so the quality of individual courses varies according to the instructor's level of skills.

But in a distance learning system…where our goal is to optimize both teaching and technology in the service of effective learning…we must take a far more specialized tactic. Among the many online programs and institutions in the United States, there have emerged two fundamental approaches to this task. And at UMUC, we have tried…and continue to use…both of them.

When UMUC first decided to *go online,* a group of computer-savvy faculty members from the graduate school proposed using a *single professor* approach, to structure distance courses.

This approach involves a subject-matter expert…usually a faculty member…who, after creating a course syllabus…along with its learning objectives, academic content, and a list of required reading materials…works with a specially trained distance education coordinator to bring it online.

On the other hand, UMUC's Undergraduate School chose to use a *team* approach…pairing individual faculty members, with specially trained course designers, multi-media technicians, editors, and graphics artists. And while this second strategy is more expensive and time-consuming, it has certainly paid a healthy return on investment when it comes to online quality and adaptability…especially for courses with multiple sections.

Certainly, the technologies we use form yet another critical subsystem, in our constant quest to bridge the transactional distance. Moreover, there is no "one size fits all" when it comes to technology, given wide variations in available equipment and broadband access, along with the vast spectrum of locations, lifestyles, and learning preferences.

However, there are certain criteria we should use in choosing technologies, starting with the delivery paradigm we use. When UMUC was moving into the process, there was a continuum emerging between the so-called *broadcast model* at one end…and *the interactive model* on the other.

With the first, communication is largely one-way, much in the same vein as the traditional large lecture format. Now while this technique is certainly economical, it is hardly effective or empowering.

For starters, it is passive, rather than active…teacher-directed rather than learner-led…rote, rather than receptive…and single, rather than multi-sensory. And with few, if any, meaningful opportunities for student participation or clarification, there is no real way to gauge the impact on student learning.

That said, UMUC chose to go with the *interactive* model. Under this scenario, digital technologies enable students and their instructors to form two-way virtual learning communities, in which to connect and collaborate.

So like any interactive learning environment, these communities pave the way for learners to retrieve and exchange relevant information, while also improving specific skills *and* developing individual abilities…in a way that is easily transferable beyond the online classroom and into the real world.

In fully optimizing this learning environment, UMUC has developed a delivery system that is transparent, reliable, and appropriate to the adult learners we serve…while at the same time, multi-purpose, user-friendly, and easily scalable.

As such, it is capable of incorporating an ever-widening assortment of technologies, including Internet, intranet, extranet, satellite broadcast, and interactive TV…using a broad assortment of such multimedia as audio and video streaming…text, graphics, and animation.

Of course, technology will never replace good teaching…but it can be used to enhance it within an effective distance education system. Let's focus once

again on the conventional lecture hall format…a staple for most undergraduate survey courses.

Even when the instructor is a charismatic speaker or extremely adept at using visual aids, it's difficult at best to keep a room full of minds from wandering. So students take whatever notes they can…memorize what they need for the exam…and once that's over, forget most, if not all, of what they've heard.

Consequently, undergraduate courses we have always considered to be building blocks of future knowledge are, for the most part, failing to produce the outcomes we desire.

Now at the very least, we might incorporate podcast technology to improve these outcomes…using audio, video, and graphic elements to upload lecture content into a format that students can plug and play…anywhere…at anytime.

But even better, why not take that same material and use it to create a highly interactive and multi-sensory video simulation, using the latest gaming technologies. One that not only fulfills the contemporary need for intense digital engagement…but also allows learners to build on previous knowledge and accommodates for individual learning preferences.

We can even design this simulation to yield all sorts of useful assessment data…from a student's demographic profile……to her progress in achieving stated learning objectives……to the relative ease with which she participates in the learning experience.

In essence then, by incorporating a popular digital pastime, we have greatly enhanced the teaching process…providing our students with a concrete learning activity…which is constructive and cooperative; immersive and interpretive; analytical and applicable.

Interestingly enough, this strategy is quickly taking hold…in even the most traditional American institutions. Dartmouth College, for example, has developed one such virtual environment to train community emergency response teams…while Harvard University recently inaugurated River City to help public health professionals identify the root source of a highly infectious disease, along with a scenario for containing it.

Remote access technology offers yet another extraordinary way to *learn by doing*…and one that my university has put to exemplary use in creating its network systems and security lab.

In looking for something more sophisticated than animation or simulation to support UMUC's newly created information assurance program…Jim Chen and his team settled on remote access.

Having only a limited development budget, Dr. Chen convinced companies like Cisco Systems, Oracle, and Microsoft, to contribute free…or at least deeply discounted…hardware and software to the project. He also worked with government experts and business leaders…UMUC colleagues and advanced level students…to design and construct the laboratory in line with the programs learning objectives.

And today, this truly innovative lab --- which operates without broadband connection --- affords our students a unique opportunity to truly experiment *from a distance,* using actual hands-on, real-time applications and state-of-the-art hardware and software systems.

Needless to say, it creates what we Americans call *the ultimate win-win*. Our students acquire real-world experience with cutting-edge knowledge technologies and applications, while the workforce benefits from hiring graduates who bring this experience with them.

UMUC is also using the wonders of technology provide instructors with the anywhere, anytime assistance they need to become good distance educators.

Our Center for Teaching and Learning --- or CTL --- furnishes online access to an abundance of professional development resources, in a variety of formats…along with structured training workshops and peer mentoring opportunities for our faculty. We have also embedded a Faculty Media Lab, which brings instructors, course designers, and distance education coordinators together online to create innovative audio, video, and graphic online learning enhancements.

Last, but certainly not least, we must consider learners as a subsystem, within the context of their many different locations and time zones…assorted learning preferences and lifestyles. So the “diversity factor” must play a major role in planning for and ultimately supporting their success.

At UMUC, we are beginning to develop *culturally sensitive* distance learning spaces and activities…combining locally relevant data, textbooks, and case with state-of-the-art technologies and media enhancements to customize virtual classrooms. And in doing so, meeting local workforce needs, while also accommodating for native languages and learning traditions.

We are also bridging the gap between what our students see on the screen and what they need to use it successfully…by putting quality student support services on par with quality academic programming.

Using 24-hour, full-spectrum system support, we are able to deliver a wide array of targeted services online…from class registration, tuition payment, and financial aid…to placement testing, academic advisory, and, career counseling.

UMUC has also made user-friendly library services a top priority… having now built a vast repository of electronic library resources…which includes more than 100 databases, many of which furnish full-text versions of journal and newspaper articles.

Moreover, we have reference librarians on duty around the clock to assist students by e-mail; chat room; or telephone…while also obtaining copyright permissions for our faculty members…and digitizing selected books and articles for them to use in the classroom.

And inasmuch as the "campus connection" has always been an important part of any university experience…UMUC's Center for Student Success creates a virtual campus community…which links students electronically with mentors and tutors; clubs and honor societies; experts and future colleagues in their chosen disciplines.

UMUC is also beginning to embed interactive social networking technologies for online courses that in the face to face world rely on dialogue, debate, and documentation.

Even the most basic of these tools offers an exceptionally flexible and cost-effective communications platform…potentially linking thousands of learners…within an environment that allows for both asynchronous and real-time connection. And in doing so, engaging them in active learning, promoting important critical thinking and problem-solving skills, and facilitating continuous assessment.

For example, blogging enables students to share and evaluate information and ideas, while also learning to read and write more effectively. From the instructor's perspective, it provides an ongoing record of work from which to measure student progress. In addition, students who are more or less "invisible" in the face to face classroom actually flourish in the blogosphere, as they become increasingly more proficient as communicators and collaborators.

Given these advantages, professors in the United States are using blogs for a wide range of learning tasks…from creating digital journals and personal portfolios to coordinating group projects and maintaining discussion boards.

Moreover, this one-to-many technology makes it possible for us to build easily expandable, online communities of practice…connecting students, faculty members, and professionals from various institutions and organizations….to create and share new knowledge…engage in cooperative problem-solving…and promote a sense of collective enterprise.

Although less popular in academic settings, wikis are gradually emerging as both a collaborative learning tool and a source of open educational content. As such, they provide a common digital workspace in which any group of co-producers may generate, synthesize, and assess subject-specific knowledge. Under this scenario the wiki originator begins with an initial draft…which is then read, edited, and rewritten by subsequent visitors…who may also publish new articles and create pages of their own.

These asynchronous spaces can support virtually any size effort…from a small-group class project…to a worldwide, mega-document, such as Wikipedia. And contributors are free to build upon one another's work…frequently assuming specific roles based upon individual strengths and styles. For example, one group might check for accuracy and grammar…while another cleans up the structure and adds new pages.

I believe it's safe to say that distance learning is more than just a passing fancy, but rather a permanent dimension of today's higher education market…which is becoming more popular with each passing year. Still, an academic shift of this magnitude demands worldwide transformational leadership of the highest order. International scholars and distance educators…global business executives and government officials…all working together to champion the cause…facilitate the coalitions…and jumpstart the development.

We should also take every opportunity at conferences such as this one…to share promising practices and build true pipelines for innovation and investment…with other like-minded, public and private institutions and organizations…both in and out of our respective countries. Because by reaching beyond our own university walls we may create a far more inclusive *distance education ecology*.

One that fully supports this new culture of learning, while exploiting the fluid boundaries between knowledge producers and knowledge consumers. And one that empowers us to identify critical interdependencies; integrate core learning technologies; and sustain commonly held values and principles.

It is an extraordinary undertaking…but one that promises an equally remarkable return on investment. Especially in a world where the only constant is change and the race for knowledge, more critical than ever.

Thank you.