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The Dynamic Duo:  
The Union of Invisible Technology with a Learner-Centric Learning Model

**Cynthia M. Calongne, D.CS.**  
**Colorado Technical University**  
[calongne@pcisvs.net](mailto:calongne@pcisvs.net)

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## The Dynamic Duo:

### The Union of Invisible Technology with a Learner-Centric Learning Model

Cynthia M. Calongne, D.CS  
Professor of Computer Science  
Colorado Technical University  
Colorado Springs, CO USA  
[calongne@pcisys.net](mailto:calongne@pcisys.net)  
[www.colorado-tech.com](http://www.colorado-tech.com)

#### **Abstract**

Course designers tread a delicate path between sophisticated tools and course design options. This paper explores the learners' need for invisible, interoperable technology and learner-centric course designs. We need both to offer easy-to-use solutions coupled with great communication. Getting students connected means more than connecting them to the Internet and to the online course materials. Learners need a learning environment that is easy to access and a course design that supports their needs.

#### **Introduction**

If Broadband is a highway, then a learning model is the roadmap. Communication and feedback provides us with an orientation of our present location on the map, letting us know where the "You are here!" sign is located. Without that connection, we are lost.

Online classroom environments offer a wonderful opportunity for learning, but they require us to know where we are going, where we are, and how to get there. Courses are designed with a destination in mind, and there are many routes to reaching it. To reach this destination, this paper provides a brief examination of the benefits of invisible technology combined with a learner-centric learning model for course design.

## **The Influence of Tools and Technology**

Considerable attention has been directed to the tools and technology that is available for online course design and delivery. These Internet-enabled tools provide excellent opportunities for conveying technical information to learners using a mix of data, voice, sound, graphics, animation, video, and other multimedia strategies.

In the past, high bandwidth multimedia course designs were not viable for many learners, requiring course designers to consider alternatives, such as streaming audio and video options, and their costs (Ross 1998). Today, the increased use of Broadband has course designers examining a wider realm of possibilities. Rather than focus on tools, let us examine the features that learners require.

## **Invisible Technology**

Great courses leverage the benefits of invisible technology to integrate information, interaction, feedback and activity via a variety of software and hardware solutions. To provide easy access to students, invisible technology is required.

Invisible technology hides the complexity and details concerning the installation and configuration of an integrated, automated system. In this context, we extend that concept to include Internet-enabled solutions with course design and delivery tools. We can extend it further, given the projections of industry leaders for product interoperability.

Innovative solutions are being developed to integrate and provide network capabilities for PC and non-PC consumer electronics. These interoperable solutions will integrate a user's environment with the world, increasing the ability to communicate

while reducing the complexity of installation and configuration. The benefits of this “ubiquitous value network” include the ability to access any type of information from any location using any type of device (Levy et al. 2002).

Imagine if students were no longer restricted to PCs, but could move freely and interact from any location while participating in online course activities? We would then envision an anytime, anywhere capability. Add tools that integrate consumer electronics as well as PCs and learners have a personalized solution.

What is required to realize this vision? As the use of Broadband technology increases, manufacturers shift our attention to the interoperability of technology. Several partnerships exist to devise strategies for creating a ubiquitous value network by the year 2005 (Sony 2003).

With the promise of interoperable, invisible technology, learners are able to connect and communicate freely using comfortable tools. We’ve focused on the medium, now let us shift our attention to the message.

### **Learner-centric Learning Models**

Traditional learning models focus greater attention on the presentation and memorization of information. In course design, much of our attention has been devoted to pedagogy. Pedagogy focuses on the learning of facts associated with the subject domain (Nevins 2003). While it is important to know the basics of any subject, online learning is not the same as reading a book and remembering the facts. Learners need to experience the course information and draw conclusions about it in order to store, process and learn it.

Learners tend to prefer an applied approach to learning. Andragogy shifts the focus from learning facts to applying them (Nevins 2003). It feels natural for learners to incorporate the course concepts and use them to complete projects, labs, case study analyses, discussions, interactive games, roleplay, simulations, and other activity-based learning techniques.

What is a learner-centric learning model? Shifting the attention from a person who studies (the student) to a person who learns (the learner) is the first step. Active learning is not a new concept (Novick 1996) (Perez et al. 2001), but the paths that we take to achieve it can be quite varied. Parental learning is a simple and time-honored application of andragogical learning (Nevins 2003).

Colorado Technical University (CTU) has used an applied learning focus to teach skills to students for many years. It is hard to demonstrate skill competency without application, demonstration, and synthesis. The CTU Professional Learning Model (PLM) is the evolution of CTU's learner-centric learning model (Leasure 2004).

The CTU PLM depicts a paradigm shift from traditional learning models to new roles and ways of thinking about the learning process. Emphasis is placed on activity-based learning, giving learners an opportunity to conceptualize and practice real world solutions.

It shifts the focus from instructors as the "sage on stage" to the role of coaches and mentors (Leasure 2004). Students explore the information and structure it to form analogies and apply it. Instructors guide students, providing asynchronous and synchronous interaction and feedback.

Teamwork is encouraged and classmates adopt the role of collaborators. Today's professional benefits from having strong online communication and collaboration skills. Computer supported cooperative work requires good communication tools, a clear understanding of objectives, feedback and upon occasion, guidance.

Traditionally, content has been tied to its presentation medium and subject matter. Course designers focus considerable attention on the presentation medium instead of the message. Shifting the focus to view content as a resource redirects our attention from the presentation of facts to the transformation and application of information. The concept of a learning community invites students to think of instructors as resources and to keep in touch long after the course has concluded.

Lastly, the application of authentic assessment defines the quality of a learning model. Without measurement, we cannot ensure that our course designs promote learning in students. Assessment methods that focus on pedagogy often include multiple choice and true/false exams. Such measurement methods are less effective for activity-based learning (Corbett et al. 2003).

Learning and assessment methods that focus on the application of information and transform it into knowledge that is stored to be used in future situations are the best. The CTU PLM emphasizes assessment methods to support critical thinking, activity, application and synthesis.

## **Learning Styles**

Course resources can be presented in many ways to support the needs of a variety of learners. They can accommodate different kinds of learners with different types of activity.

Learners tend to fall into four main categories. Visual and spatial learners need to read the text and see the images whereas auditory learners prefer to listen to the material (Ross 1998). Kinesthetic learners need physical interaction during the activity to construct their own understanding of it (Novick 1996) while tactile learners need to interact with the physical environment via touch and force feedback.

Voice Over IP provides one solution for using voice to share information among auditory learners. Instructors can participate in real-time lecture and interaction activities with learners, providing progressive and productive communication while demonstrating visuals, examples, and lecture slides.

Culinary courses provide learners with kinesthetic as well as tactile activities. Without physical interaction in the learning experience, these budding chefs would have an imprecise knowledge of how to prepare a culinary masterpiece with confidence.

## **Closing Thoughts**

Learner-centric learning models make sense, but are not easy to implement. Some subjects, especially those that culminate in single answers and those that have flourished under traditional methods, may be hard to adapt to discussion, analysis and activity. Critics of learner-centric learning models argue that if the current course design is successful, then why change it? This is a reasonable question and requires further

examination on a case by case basis. It is hard to argue with success, unless one examines the needs of disparate learners.

It is also important to note that scheduling activities is not enough to guarantee a better learning experience. How teamwork and individual activity is initiated, described, monitored, and supported is as important as what is done.

Learning models that focus on activity-based learning are gaining in popularity, but engaging learners to participate in the activities can be challenging for instructors. (Corbett et al. 2003). Not all activities fit the subject or the learners' needs. Course designers may need modular course designs to meet the needs of different learners.

Communication and timely feedback is essential. Without this interaction, learners can feel disconnected from the course and the instructor. Connectivity requires more than technology and Internet access.

In a learner-centric learning model, the instructor provides the glue that connects learners with opportunities for active learning experiences. Instructors, as well as learners, benefit from being actively engaged in learning opportunities. Both need interoperable, invisible technological solutions so they do not focus undue attention on hardware, software, and networking tools. Instead, they can focus their attention on the journey, their learning experiences, and the destination.

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## **Author Information**

Cynthia M. Calongne  
Doctor of Computer Science  
Professor of Computer Science  
Chair of the Graduate and Undergraduate  
Computer Science Program Committees  
Colorado Technical University  
[calongne@pcisys.net](mailto:calongne@pcisys.net)  
[www.colorado-tech.com](http://www.colorado-tech.com)