



BLENDED LEARNING v2.0

WHITE PAPER

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Turn back the clock six years to the turn of the new century ... everybody was a “paper millionaire”, Google was a college experiment, and eLearning was poised to take over the world. Face it, you thought (as I did) that the traditional classroom was on the edge of extinction, and Blended Learning v1.0 was the future.

In the past, traditional classroom training required significant effort, extensive uninterrupted classroom time, and a good teacher. In the most recent rush to web-based learning, the student-teacher relationship has been compromised in favor of anytime, anywhere technology. When it comes to learning, this intimate bond cannot be sacrificed.

Fast forward to today we find ourselves in a training conundrum where blended learning hasn't lived up to expectations and traditional classroom learning is getting long in the tooth.

So, what is the answer? - It is **Blended Learning v2.0**. The future of learning is a hybrid of past and present learning techniques that interleaves the strengths of *Traditional Classroom* (teachers and experience) and *Modern E-Learning* (multi-sensory learning objects and on demand delivery).

TRADITIONAL CLASSROOM STRENGTHS

Traditional Classroom Training has been around since King Arthur's time - over 1,000 years. In contrast, Computer Based Training (CBT) via the Internet (aka, e-Learning) has only been around for 15 years, at best - a tiny “blip” on the radar of learning. Ergo, e-Learning is a big bang result of the recent information revolution.

The traditional classroom has been successful for two simple reasons: Teachers and Experience. Teachers are the heart of soul of the traditional classroom learning experience. In fact, teachers are the heart and soul of any learning experience. So, what do teachers offer that is so special? Two things - tutoring and accountability.

Teachers are Subject Matter Experts (SMEs). They provide collaborative context so students can become engaged in the subject matter and learn interactively. In addition, teachers are exception managers. They respond to questions and provide specific guidance where and when it is appropriate. In this role, teachers must also monitor, assess, and report on each learner's progress. This level of accountability is a key strength of the traditional classroom, and it has been very difficult to replicate on the web.

A student's experience in the classroom is just as important to him/her as the teacher. A perfect example of the classroom benefit of collaborative experience is illustrated by “Metcalf's Law”. It states that the value of a network equals approximately the square of the number of users of the system. In my classroom version, “The Borg Effect”, the universe of content available in a given classroom equals the square of the number of student experiences.

There are primarily three ways to obtain experience:

- **On-the-Job Training** - learning on the job is perhaps the most common stop-gap solution for gaining experience. On-the-job training costs almost nothing to deploy, but it tends to be insufficient in providing the broad set of skills that learners need. Typically, On-the-Job Training results in deep competencies in one narrow functional area, which ultimately inhibits an organization's ability to respond to change.
- **Simulations** - by definition, simulations are not real ... they are a "simulated" reality. To gain simulated experience, learners interact with prescribed programs that provide packaged responses and guided feedback. Because simulations guide learners down a pre-determined path, they are useful and engaging orientation tools for learners who have little or no prior knowledge of a given topic. Simulations are also great tools to gain soft skills experience (i.e. leadership or sales training). For IT hard skills experience, though, nothing beats the real thing.
- **Hands On Labs** - in the kingdom of hard skills, live labs rule. Unlike simulations, hands on labs provide access to live equipment in a collaborative classroom setting. Live labs are most appropriate for technical training, because IT professionals typically enter class with some level of baseline experience. They are looking to build on this foundation by interacting with live equipment in real world scenarios. Through trial and error, during the course of their learning experience, learners are provided the freedom to experiment and test their current skills in order to gain competencies outside of the realm of their day-to-day work life. Because the breadth and complexity of real- world scenarios and problems cannot be captured in simulations, labs provide a good means for learners to tackle more complex topics and IT challenges. Unlike On-the-Job training, labs allow IT professionals to learn without jeopardizing production systems or requiring them to obtain critical skills while production systems are incapacitated.

In summary, the traditional classroom has survived the test of time because it provides an interactive teacher, accountability, and experience. Now let's take a closer look at the strengths of modern e-Learning.

MODERN E-LEARNING STRENGTHS

Technology and schools have not always been the best of friends. History is littered with failed attempts to “revolutionize” learning through innovative technology. Fortunately, these struggles have taught us one very important lesson:

*In order for technology to improve learning, it must “fit” into students’ lives
...not the other way around.*

Modern e-Learning has improved the traditional classroom experience in two significant ways: multi-sensory learning (MSL) objects and on demand delivery. Over the past few years, we have come to realize that different students learn in different ways. Therefore, teachers should present students with multiple teaching mediums in a structured learning environment. These mediums should incorporate visual, auditory and kinesthetic sensory inputs to optimize content absorption. Each learner then uses one of these inputs as their primary method of learning while the additional inputs are used as reinforcement.

The result of multi-sensory e-Learning is a significant reduction in the learner’s total study time by accelerating retention and improving recall of the program material. This is particularly important for technical learners who often “learn through their fingers.” Each student’s personalized lesson plan includes an array of multi-sensory learning tools such as hands-on live labs, mentoring with technical advisors, online and offline books, videos, lecture notes, interactive simulations, and collaborative exercises.

Multi-sensory e-Learning only works if the courses fit into the hectic schedule of today’s demanding learner. On demand delivery of MSL objects is accomplished via anytime, anywhere access and broad scalability. Believe me, technology has never been a problem for e-Learning. On the contrary, technology has sometimes gotten in the way of effective learning. That is why the content must be personalized and available when the learners need it.

Ultimately, e-Learning success will be determined by the learners. After all, we are fighting against 1,000 years of ILT momentum. While you cannot force students to adopt e-Learning, you can implement some strategies to help them “cross the chasm” from the traditional classroom to modern e-Learning. Following are a few ideas: offer both synchronous and asynchronous e-Learning to reach all audiences, provide proactive tutoring, use multi-sensory tools to keep the students stimulated, and give students time away from work, in a quiet environment, to study and learn.

So, where do we go from here? Now that you understand the strengths of traditional classroom learning and modern e-Learning, we need to “synergize” them together to create the most evolved learning methodology to date: Blended Learning v2.0.

BLENDED LEARNING v2.0

Blended learning has grown up! Version 2.0 is a powerful combination of futuristic technology-enhanced learning tools and good 'ol fashion classroom training. Today's learners have simultaneous access to kinesthetic, auditory, and visual multi-sensory learning tools. Cool. So, how do they make sense of it all? Guidance! Whether personal or virtual, the teacher is back in vogue.

Now, let's discover how to bridge the time-gap between yesterday's classroom and tomorrow's e-Learning. In the past, Blended Learning v1.0 tried to replicate the traditional classroom on the web. That was a mistake. We need a paradigm shift ... better yet, we need four paradigm shifts. Blended Learning v2.0 (BL2) is a well-balanced symphony of the following four paradigm shifts:

- Paradigm Shift #1 - The New Teacher
- Paradigm Shift #2 - Multi-sensory Learning Objects
- Paradigm Shift #3 - Experiential Learning
- Paradigm Shift #4 - On Demand Delivery

PARADIGM SHIFT #1 – THE NEW TEACHER

In Blended Learning v2.0, the *New Teacher* is any person, or program, that guides learners through multi-sensory learning objects and experiential labs. The function of the teacher has shifted from subject matter expert to guru, exception manager, and auditor.

As a guru, today's new teacher relates to modern learners in a less authoritative, more interactive way. This is very important because the new in-flux of 21st century learners are demanding more collaborative peer-to-peer experiences. They are looking for contextual guidance, not teaching.

As an exception manager, today's teacher must be able to answer questions and provide guidance in real-time. For example, proactive tutoring (in-person or through eMail) improves student moral and helps keep learners on track. In addition, today's teacher must act as a knowledge auditor. Accountability is key to Blended Learning v2.0, and it is the teacher's responsibility to make sure that each learner accomplishes his/her training goals: i.e., acquire skills, gain knowledge, etc.. Knowledge auditing can be measured in a variety of ways: skills assessment, usage reporting, and performance-based testing just to name a few.

So, what does today's New Teacher look like? You would be surprised. Teachers can be people (in a physical classroom), teachers can be web-based projections of people (in a virtual classroom), or teachers can be intelligent programs that act like people (avatars). Avatar teachers are especially interesting for three primary reasons: 1) avatars are always available, 2) avatars can be personalized on demand to "fit" a particular student's profile (learning type, language, tutoring preferences, etc), and 3) avatars "learn" over time and become a central repository for knowledge gained from The Borg Effect (see above).

In summary, today's New Teacher must be flexible enough to support our populations' increasing movement towards displacing time. Today, people work and learn in micro-time, and teachers must be able to anticipate and respond to changing needs in the classroom and beyond.

PARADIGM SHIFT #2 – MULTI-SENSORY LEARNING OBJECTS

In Blended Learning v2.0, *Multi-sensory Learning Objects* are customized on-the-fly according to learner type (modality) and/or content type (hard skills or soft skills).

This new approach to multi-sensory personalization is better than its predecessors for the following key reasons: it is learner-centric, it combines multiple on-line and off-line learning vehicles, it favors learning over technology, it offers anytime, anywhere access when appropriate, and most importantly, it doesn't sacrifice the all important student-teacher relationship.

The learner-centric Blended Learning v2.0 approach incorporates several multi-sensory learning tools to ensure effective and personalized skills transfer. These tools are delivered in two important steps: Step 1: assessment, and Step 2: personalized delivery.

In Step 1, BL2 assesses each learner's strengths and weaknesses with numerous pre-tests. The resulting personal learning prescription allows learners to focus on the technical material that they don't know. This means that they don't have to waste time on boring reviews, and they can maximize their precious study time by building on existing skills.

In Step 2, BL2 delivers web-enabled study material using a variety of multi-sensory tools. Some learners receive the most effective skills transfer by reading reference texts and analyzing diagrams, while others learn better by watching videos. Still others grasp sophisticated concepts best in discussion groups and hands-on lab exercises. In recognition of these diverse learning habits, BL2 delivers courses in a combination of media that address these different learning senses.

Blended Learning v2.0 utilizes an objective-based Learning pedagogical approach. This innovative learner-centric methodology maps individual learning packets into the following taxonomy: each *Program* contains *Courses* (roughly 6 per program) which contain *Lessons* (roughly 7-12 per course) which contain *Objectives* (roughly 4-7) which contain multi-sensory *Learning Tools* (roughly 5 per objective) which consists of roughly 30 minutes of learning.

The result is a pyramid of learning objects that can be measured and configured at a very granular level (see Figure 1). In addition, the Pyramid Taxonomy approach creates an unprecedented level of content depth for each course. For example, a single BL2 course typically consists of the following:

- 7-12 Lessons
- 40-60 Objectives
- 300 Learning Tools
- 150 Hours of Learning!

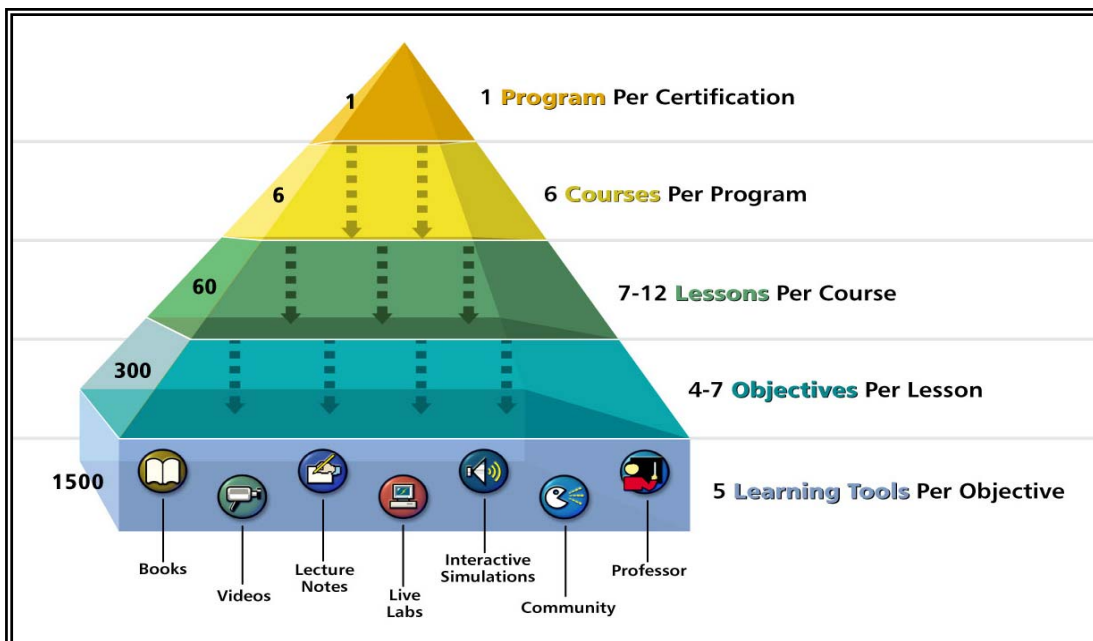


Figure 1: Multi-sensory Learning Taxonomy

In BL2, every multi-sensory course is individually built based on existing learner skills and personalized learning tools. The result is a very personalized, and engaging, learning experience for every learner. This is a key element of Blended Learning v2.0. My 30-hour course is completely different from your 30-hour course, even though they are both drawn from the same pool of 300 building blocks. And, here is the cool part, this personalized multi-sensory construction process is completely automated!

PARADIGM SHIFT #3 – EXPERIENTIAL LEARNING

In Blended Learning v2.0, *Experiential Learning* consists of on demand, interactive, real-world scenarios delivered to learners from a central repository of intelligence-based equipment and/or simulations. These are not the old-fashioned labs you grew up with. Experiential learning allows learners to interact with live, non-production workscapes (working landscapes). This approach is especially engaging because it feels “real” to learners and encourages them to test the boundaries of their comfort envelope without fear of retribution.

In short, experiential learning develops skills, and the difference between skills and knowledge is practice! Today's new mode of practice is accomplished in three ways:

- LiveLabs
- SmartLabs
- Interactive Gaming

LiveLabs are remote hands-on labs with live equipment via a web-based anytime, anywhere interface. LiveLabs are "live" because the equipment is real. Now learners can have all the benefits of traditional classroom labs from the comfort of their own home or office.

Furthermore, they can access the equipment when it is convenient for them and build authentic solutions to real-world problems. Some define "labs" as merely access to equipment. In Blended Learning v2.0, we define "labs" as experiential learning in which a learner steps through a series of guided actions, works through real-world scenarios, and actively controls live equipment. Now that's what I call "practice".

SmartLabs are a genetic cross between LiveLabs and intelligence-based simulations. While LiveLabs are the best way to develop hard technical skills, how does one develop "soft" analytic and planning skills? Revolutionary SmartLabs provide instant, unscheduled access to real world case-study exercises. Unlike LiveLabs, SmartLabs do not focus on configuring equipment. Instead they help users formulate a plan of action in a world of "imperfect" information. They provide the ability for users to practice architecting solutions to real-world case-based projects. Then, when the learner is ready to present his/her solution, the SmartLab reacts with intelligence-based feedback, including curveballs. This is as close as you can get to the real world without actually stepping into it.

Interactive Gaming technology is quickly becoming an accepted, and successful, modality for practice. Games offer learners a chance to collaborate and engage in simulated realities without concern for permanent consequences. And, to be honest, games are fun. Blended Learning v2.0 leverages interactive gaming technology to motivate learners, simulate worksapes, and assess performance.

In summary, a fully blended mix of LiveLabs, SmartLabs, and interactive games, complemented with other training materials, is the most appropriate solution for today's increasingly distracted learners. This approach allows learners to self-select which modalities and techniques are most appropriate for their skill level, learning style and schedule. Providing access to a broad range of experiential learning solutions is the best way to maintain skills in today's challenging and rapidly changing workscape.

PARADIGM SHIFT #4 – ON DEMAND DELIVERY

In Blended Learning v2.0, On Demand Delivery is an integrated, pervasive delivery platform for personalized, multi-sensory learning objects. In addition, this platform acts as an interactive launching pad for avatar teachers and experiential learning labs.

As an integrated platform, Blended Learning v2.0 offers asynchronous and synchronous access to MSL objects. In addition, the platform employs a variety of emerging technologies for on demand content creation and delivery - including, wikis, blogs, and podcasts. Wikis are collaborative, real-time documents that web learners use to create course content on-the-fly. Wikis work because relevance is important, and the less time you have to build content, the more relevant it is.

Blogs (web logs) provide support for user communities so that diverse, and topical, experiences can be shared across large groups of learners (i.e. Metcalfe's Law on a large scale). Finally, podcasts are audio and video snippets of content that learners can download from the web and take with them via digital delivery gadgets (i.e. iPods).

CONCLUSION

The key to success is being **taught**, not just shown. All of the new technology in the world will be ineffective if a competent teacher isn't guiding the way for a student's success. Furthermore, the teacher needs to be the link between the old fashioned classroom setting and all of the new learning technologies flooding the market. These technologies are great for customized learning, but the teacher must successfully integrate them or the learning success rate will not accelerate.

Due to the importance of training to an organization's success, trainers also need to be innovators. As the variety of learning tools increases, trainers need to adapt in order to keep their company's knowledge base at a cutting-edge performance level. Ultimately, with Blended Learning v2.0, everybody within an organization becomes a Teacher. The role of the company is to make this function a component of every job description and to incorporate learning AND teaching into the fabric of the company's culture.

In conclusion, Blended Learning v2.0 leverages technology where appropriate while keeping the student at the center of skills assessment, transfer, and application. Today's exciting new technologies WILL revolutionize learning, the trick is making sure that the student is always at the head of the class.

BIOGRAPHY – DAVID JAMES CLARKE IV

As Toolwire's co-founder and primary innovator, David James Clarke IV brings over 20 years of industry passion and entrepreneurial spirit to his e-Learning architecture, publishing, and speaking projects. An education pioneer, Clarke developed the company's customer-centric philosophy and learning methodology, which originated the concept of live, hands-on learning for customers in an anywhere, anytime format.

Clarke is an industry expert in the education and e-Learning industries, and is renowned as the author of the Novell NetWare series of Study Guides. Prior to Toolwire, he served as a technology professor at the University of California, Berkeley. While there, Clarke developed one of the very first Multi-Sensory learning systems for graduate students in the Haas School of Business.

Prior to the University of California, Clarke founded the Computer Telephony Institute, and served as Director of systems integration at the Walt Disney Company. Clarke has designed and built data networks in worldwide corporate sites, and is a noted author with over 34 books in publication.

Clarke has a bachelor of sciences degree in genetics from the University of California, Berkeley, and a master of Business Administration, M.I.S. from California Polytechnic.