Hands On Technology Transfer, Inc.

White Paper

E-Learning Myths and Realities for IT Professionals Revisited

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Abstract

In 2002, Hands On Technology Transfer, Inc., published a white paper titled E-Learning Myths and Realities for the IT Professional. Now, 18 years later, we revisit the myths and realities we discussed almost two decades ago, and see what has changed, what has stayed the same, and what new issues have arisen.

In 2002, *Hands On Technology Transfer, Inc.* (*HOTT*) published a white paper titled *E-Learning Myths and Realities for the IT Professional*.[1] Then as now, we at HOTT were excited by the advantages and opportunities offered through e-learning, but then as now, we had reservations about some of the claims being made by e-learning advocates. The 2002 paper received widespread attention and sparked some healthy debates.

Much has changed in the 18 years that have passed since we first published the paper. Like the world, our view has evolved. But evolution is necessarily a slow process, and while much has changed, much is still the same. In this paper, we will revisit the myths and realities we discussed almost two decades ago, see what has changed and what has stayed the same, and will consider some issues that were not addressed back then.

OLD E-LEARNING MYTH #1: E-LEARNING COSTS LESS THAN LIVE TRAINING

Then, the myth was that e-learning costs less than live training. We revealed the reality that the savings were clearly illusory. The per-training-hour cost of producing e-learning was provably higher than for instructor-led training (ILT). The costs of acquiring (or renting) and managing content were high. And for fast-changing technical topics, the short shelf-life of educational materials that were dramatically more expensive than the materials necessary for ILT drove costs higher.

Today, despite wonderful technological advances and widely available e-learning tools like *Articulate Storyline*, *Adobe Captivate* and others, the fundamental truth has not changed. To develop an e-learning course, instructional designers must do everything they do to develop an instructor-led course -- and only then can they *begin* the task of creating a stand-alone e-learning course.

Typically, this means that notes have to be converted to audio scripts (we hope; unscripted or unedited lectures are far too often clumsy, tedious, imprecise and repetitive), and voice-over and/or video-recording must take place. Rich visual elements must be conceived and developed to keep the attention of the student. A learning interface ("engine") must be created, and media developers must program and pour the audio, video and creative elements into the engine. Special lab exercises -- exercises whose primary goal is to assure that every student succeeds without an instructor's help -- must be created and programmed into the engine. The whole thing must then pass through a rigorous and costly QA process before it is released to students.

The cost to create such training is high. In 2002, experts suggested that it took about 100 hours to develop an hour of e-learning. By 2017, the time estimates had come down, but only somewhat. A 2017 study[2] by the *Association for Talent Development* (ATD) concluded that it takes about 71 hours to develop an hour of e-learning that includes even a "limited" level of interaction, well more than twice as long as they say it takes to develop material for an instructor-led course that covers the same material. This estimate does not include the time spent to learn how to use e-learning development tools, develop e-learning engines, create templates, and build frameworks. Clearly, once a course is fundamentally designed, the premium that must be paid to develop it into an e-learning course is spectacular, bordering on breathtaking.

Instructional designers and media developers can, of course, compromise to keep costs down. E-learning can consist of an unedited video-recording of a classroom presentation, coupled with hastily constructed lab exercises that generally map to objectives but do little more than have students mimic the processes discussed during the lecture. Such an approach yields a weak product and a weak position: if the argument is that terrible training is cheaper to develop and deliver than excellent training, we agree.

Of course, the perceived advantage of e-learning courses is that once developed, the cost of delivering them is close to zero. However, this argument fails to take into account that the largest delivery cost is the salary of the students who are taking the course, and when this is factored in, the savings are minor at best.

When considering training for IT professionals, we must also factor in the speed at which technology changes and the frequency with which technical e-learning courses must be updated and rebuilt, which can be as often as every six to twelve months. Once this cost is accounted for, any remaining savings disappear.

All in all, then as now, high quality e-learning is not less expensive than high quality instructor-led training.

OLD E-LEARNING MYTH #2:
WITH E-LEARNING, COURSES CAN BE HIGHLY PERSONALIZED, AND TAILORED TO INDIVIDUAL LEARNING STYLES AND PROBLEM DOMAINS

Then, the first part of the myth was that e-learning offers highly interactive learning and multiple learning paths so that learners can proceed at their own speed according to their specific knowledge and needs. We revealed that the reality was more complex than that.

We saw that the level of interactivity in e-learning products corresponds to the cost. Cheap e-learning products were not interactive. Expensive e-learning products were somewhat interactive. No e-learning products were remotely as interactive as the classroom or mentored on-demand training.

We saw that, as is the case for onsite ILT, e-learning products do allow learners to skip over material they know or in which they are uninterested. We also saw that because of the extraordinary costs associated with building complex e-learning products, courses with multiple and diverse learning paths were not economically feasible, and were therefore unavailable.

In 2002, another part of the myth was that e-learning courses are easily customized for content and specific audiences. We discovered that the reality is that it is far easier and less expensive to deliver a carefully targeted live class than to customize an e-learning course.

Yet another part of the myth was that e-learning offers online knowledge assessment, multiple learning paths and tracking mechanisms that are unavailable with ILT. We revealed the reality that this argument conflates LMS's (learning management systems) with e-learning. If an LMS is truly called for, it is as easily used with ILT as with e-learning.

Today, even the most ardent e-learning advocate (myself included) must admit that the promise of multi-path, personalized, learner-specific and domain-specific e-learning has been woefully unfulfilled. The reason: even with the most clever engine and template designs, the cost of such development remains prohibitive. According to ATD, an hour of e-learning with the "complex" level of interaction that would characterize such multi-path personalized learning would take 132 hours to develop, which is about twice that needed for less interactive e-learning, and almost five times the time they say is typically needed to develop the corresponding ILT.

However, with the advent of personally facilitated e-learning courses, myth #2 begins to hold some water. If a student who is taking an e-learning course is supervised and actively mentored by an instructor, and has regular, assured opportunities to address specific concerns, the e-learning experience can easily address those issues. Otherwise, unless enterprises are willing to pay a colossal premium, e-learning is not easily personalized, tailored to individual learning styles, or modified for specific problem domains. Live, remote-

live or personally mentored self-paced training is best and most economical for this sort of customization, and even a public class offers a better opportunity for learners to address specific concerns and issues than does an e-learning course.

OLD E-LEARNING MYTH #3: E-LEARNING MEANS ANYTIME/ANYWHERE LEARNING

Then, the myth was that e-learning means anytime/anywhere learning, and, as we said then, it does. The problem was that, left to their own devices, and without time scheduled and carefully blocked out by management for training, almost no one actually completed e-learning courses.

In this regard, little has changed. The average completion rate for MOOCs (massive open online courses) is around 15%. *ElearningIndustry.com* suggests that educators are doing a good job if they can get even 20% of students to complete e-learning courses, and tells us that it is necessary to break presentations into 2-7 minute chunks to keep the attention of learners (a preposterous idea for complex technical topics). While occasional unsupported claims by e-learning providers make the case for higher completion rates, the plain fact is that there are no credible studies that suggest that e-learning completion rates are as high as even 50%.

There is good reason for this: learning complex material is difficult, and most of us are not well equipped and inclined to make the required effort unless there is strong motivation for doing so. Such motivation is usually lacking in e-learning. As stated in *The AMA Handbook of E-Learning*:[3]

> Learning is hard work. Even if we create the perfect piece of e-learning software (content), we still, as trainers, must go eye-to-eye with a generation of imperfect adult learners. We are not a nation of independent learners. Most of us learned how to learn within a coercive, expert-dependent educational system. Many of us were motivated to learn not to achieve rewards but to avoid punishments -- such as F grades, or the embarrassment of being called on and found wanting in class. Remove the evaluative teacher and grade book from the electronic classroom and many adults learners, not surprisingly, lapse into recess mode.

Despite such explanations for these appalling completion statistics (including, "We live in the age of information overload," and "Students don't finish because they don't need to," etc.), it is revealing to compare completion rates for live and remote-live training to completion rates for e-learning. When students attend live or remote-live training courses, after the first day, the drop-out rate is typically close to 0%. Ultimately, anytime/anywhere learning sure sounds convenient, but it accomplishes surprisingly little, since it is used so little and haphazardly.

However, here again, the notion of personally facilitated e-learning changes the equation. When an instructor/mentor is added to the e-learning formula, completion rates rival those of instructor-led classes.[4] In this case, since the student is almost certain to complete the course,

the e-learning experience is comparable to that of the classroom experience, and the anywhere/anytime claim becomes meaningful.

OLD E-LEARNING MYTH #4:
E-LEARNING IS MORE EFFECTIVE AND LEADS TO GREATER RETENTION

Then, the myth was that e-learning is more effective and leads to greater retention than ILT. We revealed the reality that there was no evidence that this was the case, and, indeed, the opposite was true.

Today, it is illuminating to observe how *seldom* that claim is made. We searched long, hard, high, and low for such claims, and for evidence to support such claims, and found next to nothing.

Several sources repeat the verbatim statement, "IBM have found that participants learn five times more material in online learning courses using multimedia content than in traditional face to face courses,"[5] but offer no supporting documentation for the claim. A deep dive convinced us that no one at IBM ever said any such thing. What was said -- in 2004 -- was that a revised management training program that included "blended learning" enabled students to learn five times as much as the old program.[6] If IBM ever conducted an apples-to-apples study on the efficacy of e-learning, it's news to us.

In the world of IT technical training, the boldest claim we hear is when some marketing group points to a "new study" that says e-learning is "as effective as" face-to-face learning. Closer study of such claims invariably reveals that the studies say that e-learning is as effective as face-to-face learning:

- for online courses for graduate students.
- for learning corporate software.
- for clinicians.
- for learning a specific medical procedure.[7]

For complex technical training? Nope. Silence.

Another favorite and often-quoted statistic is this: "The Research Institute of America reports that learning retention rates improve from 8 to 10 percent for face-to-face training to 25 to 60 percent for e-learning."[8 and 9] This statement is, to put it mildly, extremely problematic.

First, the *Research Institute of America (RIC)* was never a bona fide research institute. It was a one-time publisher of business-oriented literature that specialized in subjects related to taxation. RIC was acquired by Thomson Corporation in 1989, and today survives only as a part of *Thompson Reuters (Tax and Accounting), Inc.*

It appears that they did make such a claim in the year 2000, in a paper written by analysts who were apparently pumping up the e-learning market. Nothing in their bibliography or footnotes supports the claim, which appears to be made up from whole cloth, or from some bizarre twisting of statistics that had nothing to do with a comparison of e-learning and ILT.

We thank *Learning Accelerators*[10] for their excellent research on this matter, and join them in the call for e-learning proponents to withdraw this claim immediately and not to repeat it. *No research before or since supports these claims*.

Article after article and web page after web page with titles such as *Advantages of E-Learning* offer long lists of reasons why e-learning is in some way superior to ILT.[11] Many of the arguments are valid (convenience, consistency), but the argument that e-learning is more effective, or results in greater retention, especially for complex technical topics, is nowhere to be found.

What has been found to be effective is the mixing of the beneficial characteristics of ILT with the beneficial characteristics of e-learning. E-learning products can be effective if they are well-constructed, task-oriented, and contain lab exercises that are both sufficiently challenging and use real software environments, rather than simulations that make failure all but impossible. ILT is effective under the same circumstances, but offers these advantages:

- A controlled learning environment: students are not only isolated and protected from work distractions, they work in a setting in which they necessarily focus on learning. There is no choice, short of running away.
- Truly interactive Q&A: there is no substitute for the ability to asked specific, focused questions to both the experienced, expert instructor and a classroom of colleagues.
- Accountability (the instructor): in many university settings, if the student fails to learn, the student has failed. In the corporate training world, if the student fails to learn, the instructor has failed. The instructors dare not fail at doing their jobs any more than the programmers dare to write flawed code. In neither case will the employee last long.
- Competition (peer pressure): while it is true that some professionals enjoy competition while others shun it, the presence in the classroom of colleagues pushes all to perform.

When the convenience of e-learning is combined with the advantages of ILT (especially personal facilitation by an expert), learning and convenience are maximized.

There is no even mildly persuasive evidence that e-learning by itself is more effective than ILT, nor that it leads to greater retention.

OLD E-LEARNING MYTH #5: E-LEARNERS COMPLETE TRAINING IN LESS TIME AND BECOME PRODUCTIVE MORE QUICKLY

Then, the myth was that e-learners complete training in less time and become productive more quickly. We revealed the reality that such statements at the time were completely speculative. Even then, it was known that the time it takes for individuals to complete self-study courses varies widely, and while some may finish more quickly than they might finish an ILT course, others take much longer than they otherwise would.

People continue to make these claims, and the claims continue to be unsupported. Indeed, they miss the point altogether (as we will discuss).

We often see statements such as this one: "E-Learning takes up to 40-60% less time than classroom instruction."[12] This is exciting news, and we would be thrilled if it were so. Alas, the drill-down is disappointing. The author of this particular statement cites his own previous writing as the source, saying:

> E-learning can reduce employee time associated with:
>
> Starting and wrapping up learning sessions
>
> Travel time
>
> Breaks and meals
>
> Teaching to a group, rather than an individual[13]

The argument that travel takes time is valid, but this argues in favor of onsite or remote-live training as much as e-learning. The argument that teaching to a group takes additional time is also valid, but ignores the fact that teaching to a group also introduces additional social interaction and Q&A that has tremendous value to the learner. We do not argue with the position that learners will spend less time learning if there is no overhead associated with starting or wrapping up, although this does not seem to be media-specific, and we do not know how this might be accomplished. And it is true that ILT or e-learning will go more quickly if learners do not have to pause to eat. Sadly, it seems that they must.

The claim above is often repeated in various forms. Another example: "An e-learning course can take anyway [sic] from 40 to 75% less class time than a traditional course."[14] This author, who also advises that e-learning lessons must be broken into small chunks, goes on to explain that "the course itself will typically span over a longer period." So the thesis is that while it is true that more time will pass before the learning activities are completed, less total time will be spent. This argument has two obvious flaws: (1) no supporting data are cited; apparently the statistic is invented, and (2) it ignores the time and energy required to resume training. A student who is in the middle of learning any complex technical material, having left the subject matter for hours, days or weeks, is unquestionably going to need to re-orient and re-acquaint themselves with the previously studied material. To ignore this is unrealistic and even disingenuous.

Another of the "How E-Learning Saves Time" articles states that e-learning saves time because learning chunks can be of short duration and can focus exclusively on "need to know" information.[15] The issue here is not e-learning vs. ILT, but good training vs. bad training. If the subject matter is such that it is best organized into small chunks, it can and should be, regardless of delivery mechanism. If instructional designers are creating training materials that include "nice to know" information in an environment where management demands that

only "need to know" information be presented, the problem is again unrelated to the delivery mechanism.

Occasionally, we see a paper or a write-up that seems to have some real academic and scientific rigor and authority behind it. In one such article, Dr. Will Thalheimer says, "If you compare e-learning to classroom training 'in the wild,' let's say, it turns out that e-learning tends to be slightly better, more effective, than classroom training."[16] This is exciting news to the e-learning advocate until -- we read on. Thalheimer says, "However, *e-learning* is not a 'thing.' *Classroom training* is not a 'thing.' Both of them are comprised of many learning factors. What typically happens is that when we have classroom training, we tend to lecture more, and have less interactivity and less real-world practice. And because of that, e-learning tends to be better."

So what Thalheimer actually is saying is that learning that does not have a high rate of interactivity and a great deal of real-world practice is less effective than training that does. At the risk of being flip: duh. We agree. Again, good training is better than bad training. Once again, this "e-learning is superior" claim -- even this meager claim that it "tends to be slightly better" -- does not stand up to scrutiny. The question is not whether classroom training that lacks interactivity and useful exercises is as good as e-learning that includes interactivity and useful exercises. The question is whether e-learning that includes interactivity and useful exercises is superior to classroom training that includes interactivity and useful exercises. There is no suggestion that it is.

Thalheimer helpfully hammers this point home: "Now, when the researchers were very clear in holding the learning factors steady, in other words, if you have an animation presented in e-learning, you would have the same animation presented on a PowerPoint-projected slide in the classroom, when the learning factors were held constant, then the results were the same. Because it's not whether it's e-learning or classroom that matters. What matters are the learning methods used."

There's the heart of the matter: the real issue, so often ignored in these debates, is simply the quality of the instruction and utility of the lab exercises. *Good training is better than bad training*. Given this, the focus for the professional who seeks training for themselves or their staff ought to be on the quality of training, before even considering the delivery method.

We are again compelled to add that any high quality learning experience includes an instructor/mentor to nudge the student towards completion and help when the student gets stuck. All learners, regardless of the delivery mechanism of a course, will complete training in less time and become productive more quickly if a mentor is involved.

NEW E-LEARNING MYTH #1: LONG-FORM, CONVENTIONAL ILT CAN BE REPLACED BY MULTIPLE MINI- OR MICRO-COURSES

At least two of the myths we previously discussed included the claim that it takes dramatically less time to present and learn material via e-learning than via conventional ILT. As we saw, the citations that are widely used to support these claims are baseless, and the claim is almost entirely bogus. (E-learning does have one advantage in this area, which we will discuss later.)

As part of this claim, and/or in support of it, we often hear that one of the great advantages of e-learning is that conventional training can be replaced by training that is organized into much smaller learning units (typically 5-15 minutes), which in total take much less time.

These arguments start with statements such as this one: "Today's learner has less time and a shorter attention span."[17] The first part of the statement is but a self-fulfilling prophecy: the learner has as much time available as the employer allows. If the employer has unrealistic expectations -- "I demand that my employees learn to speak, read and write Cantonese fluently in two weeks" -- no adjustment in training methodologies is going to help. If the employer is merely trying to assure that training is as efficient and effective as possible, then well designed training is the answer, regardless of the delivery mechanism. As we have discussed, there is no credible evidence that e-learning is a more efficient delivery mechanism. In all cases, again, good training is better than bad training.

If the argument is that workers have less time available than ever because of 21st century changes in the workplace, it crumbles under scrutiny. Workers, particularly American workers, have always been under overwhelming pressure to produce much and quickly. The notion that modern learners are facing some unique challenge -- especially given the incredible tools they have at their disposal that were not available to previous generations -- is laughable.

The second part of the statement -- "Today's learner has … a shorter attention span" -- is simply much-repeated fiction. As we have known for some time, attention spans are not shrinking.[18] Individuals have become more decisive about what they view, but our ability to maintain our focus on content is actually improving over time as we become more selective about the content to which we choose to devote our attention.[19] The shrinking attention span argument is a myth.

Still, even ignoring these myths, the argument persists that training must and should be presented via e-learning and carved into chunks that take 5-15 minutes to complete. Here is a typical and well-argued example:

> A microlearning course can be just a five or 10 minute lesson, or a series of short standalone lessons that are targeted on just one certain learning objective. One lesson = one skill. What could be better in the world of hectic schedules?[20]

What indeed? We enthusiastically agree. Where possible, short, focused lessons are useful weapons in the educational arsenal. But what of the executive who needs to learn Cantonese as quickly as possible? What of the programmer who suddenly must learn to work with a new language? If effective communication is important, it is downright dangerous to attempt to

learn a foreign language in a haphazard or as-needed fashion. If precise, trustworthy, and reliable coding is important, the risks of a learn-as-you-go approach are high, given that the learner almost certainly does not know what they don't know, and where they might err. Examples of disastrous effects of poor programming are all too easy to find.[21]

In any learning system, it makes sense to break large objectives into smaller ones that can be more easily digested. But to suggest that the brevity of individual lessons magically shrinks the overall length of a training experience is transparently fraudulent or downright stupid.

The size of learning units has got nothing to do with the ultimate length of a training experience. Furthermore, that a lesson may be restricted to some artificial time limit has nothing to do with the efficacy of training.

Also, as we mentioned earlier, the decision to make lessons extremely brief ignores the time and energy required to pause and resume training. A student who is in the middle of learning any complex technical material, having left the subject matter for hours, days or weeks, is unquestionably going to need to re-orient and re-acquaint themselves with the previously studied material.

What Is a Course?

Another way this "less is more" argument manifests itself is in the trivialization of the word "course." Those of us raised on the planet Earth are used to thinking of a "course" as a program of instruction such as those offered at high schools, community colleges, colleges or universities. In the world of higher education, a course typically consists of a few hours of classroom instruction each week for about 12-15 weeks, along with various assignments that are completed outside of the classroom during the same period, and with exams throughout and at the end of the course. Corporate training courses traditionally run anywhere from a half a day to a full week, or from 4 hours to 40 hours. Programming bootcamps and some on-boarding courses may run as long as several weeks or months.

Many in the e-learning community have decided to ignore the widely accepted and useful definition of the word *course*, and refer to a course as a much smaller unit of learning. One self-described "e-learning technology geek with 20 years of experience" says, "Most experts confirm that a good length for a web-based course is somewhere between fifteen and thirty minutes."[22] I suppose that's a good definition if you're selling e-learning products at a per-course price. Otherwise, it is unnecessarily misleading and confusing.

This redefinition of the word leads to disappointment and bewilderment on the part of the learner. Consider the programmer who goes to the web site of e-learning juggernaut *Lynda.com* (which is now owned by *LinkedIn.com*) to look for courses on Java programming. A search for courses on the subject returns 3,169 courses. Turning to the course descriptions, the programmer discovers no detailed information on these courses, just 30- or 45-second introductions and high level lists of subjects that leave most topics unmentioned. If the prospective student is lucky enough to stumble onto the *Learning Paths* link and find the path

titled *Become a Java Programmer*,[23] they discover they need to take 9 "courses" from 7 different instructors. (That's an improvement. As recently as December, 2019, the path required 15 "courses" from 10 instructors.) The organization seems haphazard (one wonders if the 7 instructors ever have spoken to each other) and there seems to be more than a little duplication, as well as some material in which the learner is likely to be uninterested (there is an entire course called *Nail Your Interview*; probably not what the current employer wants to pay for).

The other e-learning monster, *Udemy*, is far worse. A search for courses on Java programming returns 10,000 results.[24] (Actually, it's more than that, but apparently their counter maxes out at 10,000.) The courses vary in length from one that consists of 396 separate lectures totaling 79 hours, 52 minutes and 39 seconds (lab time not included),[25] and one that lasts 31 minutes.[26] (There may well be longer and shorter courses. We got tired of searching.)

Redefining basic vocabulary and offering inconsistent and confusing training options does not do anyone any favors. In fact, doing so is contrary to the most rudimentary educational principles.

Training vs. Reference

Another reason mini- and micro-lessons seem attractive is that if made generally available to learners, they can be accessed to address specific questions on a just-in-time basis. This is indeed the case, but misses the point.

Training is the process of making an individual or group proficient in some art, profession, or task, by instruction and practice. Training is characterized by the clear delineation of behavioral objectives (goals), the (preferably interactive) presentation of materials, practice, and evaluation.

Reference materials are sources of information. A reference may take the form of a formal citation to a specific book or article, or to a discussion on a web or social media site where individuals may ask, provide answers to, and find answers to questions.

Learning is the act or process of acquiring knowledge or skill. Learning often takes place through the process of education or training, but is not the same thing.

The purpose of both training and reference is learning, but they address different needs. In the context of technical learning, the reference sources that are available on the WWW are spectacular and useful, and often help technical professionals solve all sorts of problems. Sites like Quora, Stack Overflow, and various technical communities are good places to get specific answers to specific questions, and even to help debug programs. But they do not offer training. The nice people who answer questions online may help a professional determine that they have left out a semi-colon or used the wrong family of programming functions, but they do not provide training that delivers architectural understanding and expert guidance in the application domain.

If an enterprise seeks to provide training, it makes no sense to provide something other than training. It is a wonderful circumstance when training in a particular domain is easily and naturally organized and presented in such a way that it makes for useful reference material. To design training in such a way that it is primarily useful as reference material -- especially to put arbitrary time limits on lessons that cover complex topics -- is to shape lessons without regard to objectives, and violates the most basic principles of good instructional design. The result is, unavoidably, poor training.

Training must take the form of training. And good training is better than bad training that happens to serve as good reference.

The One True Advantage

The greatest single advantage of e-learning is that it *can* be presented more efficiently and precisely than ILT. Even the best, most experienced and most well-rehearsed instructor wastes a remarkable amount of verbiage with repetition, imprecise language, and off-the-cuff elaborations that may or may not need to be included in a lecture. Many extremely knowledgeable lecturers, whether professors or corporate instructors, are simply not good at consistently presenting information in a way that is easily and efficiently understood.

Because those who create e-learning lessons have the freedom and opportunity to consider every word, inflection and example in a lesson, e-learning offers the possibility of delivering lessons that are consistently clear, precise, concise and complete. Because of the time invested in scripting, the scripted lecture/presentation portion of even a complex topic is typically about 50% as long as a similar unscripted lesson presented by even an excellent instructor. Scripted presentations *may* be better than ILT, but are not guaranteed to be. The delivery mechanism does not guarantee the quality.

All in all, the claim that long-form, conventional ILT can be replaced by multiple mini- or micro-courses is a red herring. To be effective, training needs to be organized, sized and presented in a chunks that are of appropriate size for the material. One size does not fit all.

NEW E-LEARNING MYTH #2:
WITH PRICES SO INCREDIBLY CHEAP, IT IS MADNESS TO EMPLOY MORE EXPENSIVE E-LEARNING OPTIONS OR ILT

The morning of May 8, 2020, was a day like any other. I happened to look at the Udemy web site and discovered that I could sign on to take their *Java Programming Masterclass for Software Developers* -- which consists of 400 individual lectures that total 80 hours and 20 minutes in length, as well as 36 coding exercises -- for $10.99. That is, Ten US Dollars and Ninety-Nine Cents for the whole enchilada. I also had the choice of buying a subscription to Lynda.com for $29.99/month and taking every single one of their courses as quickly as I could, and then canceling my subscription. Kahn Academy, now as then, was offering thousands of courses free. At these prices, one might argue, any individual or enterprise

would have to be crazy to opt for courses that cost hundreds and sometimes thousands of dollars more.

All things being equal, the argument is sound. The problem is, of course, that all things are not anywhere remotely close to equal: the "bargain" e-learning solutions are invariably problematic, as clearly illustrated by web sites that offer third-party reviews. *Trustpilot.com* tells us that 48% of reviewers rate courses from *Lynda.com* as "Excellent" or "Great" (their two highest rankings). This might be moderately encouraging if not for the fact that 49% rate courses as "poor" or "bad" (their two lowest rankings). *Udemy* customers who completed reviews on *ConsumerAffairs.com* give Udemy a ranking of two stars of a possible five.

Here are some of the problems that customers encountered, in their own words: [27 and 28]

> [Udemy] I tried one course, *Microsoft SQL Server 2019* by xxxxxxx xxxxxxxxxxxx [name deleted as a courtesy]. It was terrible. When the presenter talked through the setup options for installing SQL Server, he was basically just making it up as he went along, often just reading the descriptions of each option with no proper explanation of what they were, and often choosing which options to keep/remove based on how much disk space they used because 'we might need that.' But again, without saying what it might be needed for. Later on, in a chapter about Security, the information was downright wrong. Finally, the English was overly casual, often bad, and the subtitles appeared to be machine generated and were massively inaccurate, compounding on already bad English.
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> [Lynda.com] Far too many of the courses are out of date for the current versions of the software which is quite a drag and makes it frustrating.
>
> [Udemy] The courses are a joke. By far the worst course I have used is the C++ for absolute beginners. This is a total load of crap. The instruction is rushed. The education is extremely light and incomplete... and the instructor is just barely there for you. This particular course is NOT for beginners and the line that it is, is an outright lie. That should give you some food for thought of the vetting process that they go through over there. NEVER UDEMY should be your motto.
>
> [Lynda.com] They are not updating courses and not giving extremely important version information for some, which happens to be VERY important sometimes. This has led to me wasting my time going through training videos only to hit a point where the course is no longer relevant because something has been updated. What good are courses for things that no longer work?
>
> [Udemy] Videos are not clear. Be wary in the first few days of purchase as you can't be refunded after 30 days whether or not you were satisfied. My course experience was horrible. I don't recommend.

> [Lynda.com] The real issue and most important were, the content was version 9. Tableau is at 10.3. and there are enough differences that it makes this training not relevant.
>
> [Udemy] Never trust Udemy. It is the most pathetic and unworthy site. ...courses were removed one week before my certification exam. ...The site is too bad and too confusing. ... The courses on Udemy are pathetically arranged and recorded.

There are also numerous complaints for both providers regarding payment and/or refund issues:

> [Udemy] Please please never ever buy Udemy, they are the worst. I bought a subscription, and now I can't cancel; they have no contact info. Fakers. Liars. Cheated! 1 TRILLION UNLIKES, HATES, THESE ARE TOTALLY THE WORST.
>
> [Lynda.com] I have been in dialogue to stop them from taking money from my card. It stops then it restarts again, they say they cannot find my account, because I no longer have it, and they still take the money. Please beware of using your cards. I am taking it up with the card company again... do not use this company it's bad news. Once they have your details, they never stop.
>
> [Udemy] There is no way to contact Udemy. When I go to their Facebook page, there is a button to message them, but as soon as I log into Facebook, that button disappears. They've gone to great lengths to hide from the public. This is worrisome, and obviously points to some type of scam.
>
> [Lynda.com] Do not use they are thieves. I signed up for a trial with Lynda.com, 3 months later I have been billed £50 by LinkedIn [which owns Lynda.com]. They don't have any customer services to talk or even email. Do not use their products.

This comment also expounds on some of the issues that clients have with Lynda.com: [29]

> In general, a lot of Lynda.com reviews are dissatisfied with the quality of the content on the platform. These issues stem from a couple of different things.
>
> First of all, some Lynda.com reviews claim that the content on the site is very outdated. Students say that a lot of topics and information provided within the courses themselves simply isn't relevant anymore. This mostly applies to tech-related courses and lectures - since the tech industry is advancing and updating every single day, it surely is hard to keep up. This doesn't justify Lynda.com, though - if you're charging money for courses, you should make sure the information will be useful to the people who decide to learn it.
>
> Another issue that a lot of Lynda.com reviews seem to exclaim is that some courses are way too slow. This critique is mainly aimed at the instructors who tend to explain a very basic and simple topic for more than ten minutes. ... The company could [should!] have stricter course guidelines in place so as to prevent similar situations from happening.

Even allowing for the fact that the third-party review sites may tend to attract mainly unhappy clients, these comments are revealing. In e-learning courses, authors have every opportunity to perfect courses and should therefore *never* receive such negative blasts. There is no excuse for complaints that a course is out-of-date once a new release has been on the street for more than a couple of months. And of course, the customer service issues are utterly unforgiveable. Any enterprise which does not understand that its primary function is to serve the customer is not to be trusted.

Our own examination of courses from these providers and others like them are consistent with the reviews we found. The courses are consistently inconsistent in quality and efficacy. Many are painfully bad. The lectures are often unintelligible because the speakers are barely conversant in English. And the enterprises, even when they claim to offer instructor support, are far too often unresponsive.

It may seem counter-intuitive that a course that goes for $1,000 or $2,000 or even $3,000 is a far better deal than a course that goes for $10.99 or $29.99, but if you keep in mind that the most expensive part of training is the time of the student, it makes perfect sense.[30] And of course, paying something for something that is of great value is always a better deal than paying something for nothing.

CONCLUSIONS

Some 18 years after we first considered the problem, many myths persist regarding e-learning. I, an ardent supporter of e-learning, am perpetually distressed by the prevalence of these myths *because e-learning is an excellent tool in the educational toolkit, and the case for e-learning is easily made without inserting false narratives.*

We do not have to pretend that e-learning saves money in cases where it does not. We do not have to profess that e-learning is trivial to customize when it is not. We do not have to overlook the fact that without facilitation, e-learners are all but certain not to complete courses. We do not have to repeat false and ridiculous claims that e-learning by its very nature increases retention. We do not have to make silly assertions such as that e-learning is more efficient than ILT because it eliminates the need to eat. We do not have to argue that 120 ten-minute presentations take less time than 20 one-hour presentations. And we certainly ought not to pretend that a $10.99 solution from an unknown entity on an unknown continent is a viable alternative to professionally crafted educational materials from long-established and trusted sources.

Excellent training, regardless of how it is delivered, is excellent training. For the IT professional, excellent training consists of carefully constructed courses that are clear, precise, concise, and complete, which map to real-world objectives, and which provide complete coverage of the problem domain. Excellent training necessarily includes comprehensive, challenging, in-depth learning activities in a realistic (not simulated) lab environment. And excellent training necessarily includes expert facilitation to guide the learner, answer

questions, and assure a satisfactory result for all. The e-learning myths are all just distractions from these fundamental truths.

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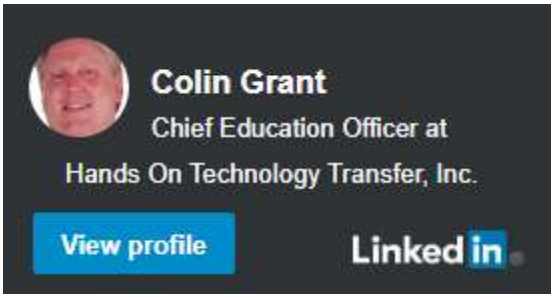

Colin Grant, the CEdO (Chief Education Officer) at *Hands On Technology Transfer, Inc.*, has worked in the field of technical education for almost 40 years as a technical trainer, programmer, course developer, media developer, manager, executive, entrepreneur, editor, and author. He welcomes your comments, criticism and input. Please contact him at Colin.Grant@traininghott.com.

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