



White Paper

The Next Big Thing in Technical Training: Instructor-Led Training

Abstract

There is a growing gap between the skills that employers need and the skills that job candidates offer, especially in IT. This gap is the result not only of rapidly changing technologies but also of the way we train technology professionals, and who trains them. Techies prefer instructor-led training, and all the evidence says it is more effective than other training modalities. It's time to get back to the most effective and cost-effective training options for technical professionals: instructor-led training and professionally facilitated self-paced training.

THE SKILLS...

GAP

A *skills gap* is the difference between skills that employers want or need, and the skills the workforce offers.¹ Some folks -- usually not those trying to hire people -- make light of the idea that there is a skills gap. A favorite example: "Skills gaps are imaginary. Just because a hiring manager says that they want a person who can fly and sing Italian opera while they're writing code does not mean that such people exist, and certainly not for the designated salary."² It's amusing, but spectacularly far off base.

The vast majority of serious thinkers -- especially those trying to hire folks -- know all too well that there is a serious skills gap. According to the 2019 *Skills Gap Survey* report from the *Society for Human Resource Management* (SHRM), 52 percent of HR professionals said that the skills gap has worsened or greatly worsened in the past two years, and 83 percent said they have noticed a decrease in the quality of job applicants, with one-third citing a lack of needed technical skills.³ IDC believes that by the end of 2020, 90% of all organizations will have adjusted project plans, delayed product/service releases, incurred costs or lost revenue because of a lack of IT skills that is traceable to the skills gap, with losses worldwide totaling \$390 billion annually.⁴ Jeremy Walsh, VP of Enterprise Learning Solutions at Wiley Education Services, says, "The skills gap is growing, becoming a larger and more serious drag on business efficiency."⁵ According to Deloitte, the skills gap could have a negative \$2.5 trillion impact on the U.S. economy over the next decade.⁶

I could easily go on, but the point is clear: we're having trouble keeping our workforce properly trained. And nowhere is the problem worse than in information technology. In one survey, 40 percent of hiring managers saw software/application development as their biggest skills gap.⁷ Monster.com reports that the most difficult positions to fill are tech jobs,⁸ and a Wiley survey published in 2019 reported that a shocking 64% of surveyed employers, 23% more than the previous year, said that they were simply unable to hire the qualified techies they need.⁹

So, yes, there is a skills gap, especially in the IT community, and it is widening.

WHAT CAUSED THE PROBLEM?

Well, a lot of things. There are many new and/or rapidly evolving technologies -- an unusually high number, by historic standards -- related to cyber-security, cloud computing, data analytics, machine learning, wearable electronics, and so on. It also seems like the tech world never tires of inventing new languages, and as we watch, we have moved and are moving from old standbys like C and C++ and Java and SQL to HTML5 and JavaScript and PHP and Angular and Spring, and now to Rust and Dart and Kotlin and Crystal and Elixir. The IT world is indeed changing quickly.

Another big change has been both heralded and ignored: the way we teach and learn.

The size of the US training market grew from \$51 billion in 2004¹⁰ to roughly \$160 billion in 2019.¹¹ While the training industry more than tripled in size, and while the e-learning industry grew to nine times the size it was in 2000,¹² the percentage of training time spent in classrooms (real or virtual) plummeted. Over 90% of training in 1999 was instructor-led training (ILT),¹³ but by 2008, the number had dipped to 64%,¹⁴ and in 2019, a mere 40% of training hours were delivered by a stand-and-deliver instructor in a classroom setting.¹⁵ We're not using instructor-led training nearly as much as in the past. And, according to at least one report, during a recent two year period in which ILT attendance dipped by 10%, the skills gap (as reported by IT decision-makers) increased 40%.¹⁶

We have also moved from using professional trainers and professional training to using training products that are, in large part, created by amateurs. We have written about this in the past:¹⁷ companies like *Udemy* offer what seem to be incredible training bargains for e-learning solutions, but let literally anybody sell courses that may or may not be complete or even correct.

Given the ever-more complex world of technology, the devastating and dramatic reduction in the use of proven-effective training methods, and the widespread use of cheap training from amateurs, is it really surprising that the skills gap is growing?

WHAT'S TO BE DONE?

We need to do a better job training IT professionals. To make training for IT professionals more effective, it seems wise to take three steps:

1. Determine which training modalities provide the best bang for the buck.
2. Ask the pros what type of training they prefer.
3. Where (1) and (2) intersect, do it.

So, first, what works? The jury came back on this one a long time ago: for complex technical training, we need instructors. We need human interaction. We need guidance. We know without a doubt that training without guidance or with minimal guidance is far less effective than training that includes a higher level of guidance. Such training not only fails to take advantage of well understood cognitive structures but ignores numerous empirical studies that consistently indicate that minimally guided instruction is less effective and less efficient than instructional approaches that place a strong emphasis on guidance of the student learning process.¹⁸ We know that instructor-led training is most effective, and that self-paced training must include an active facilitator to answer questions, provide guidance, and nudge the learner to completion. We also know, given the significant salaries of technology professionals, that the variable cost of training -- the price of tuition -- is insignificant. **Employers are far better off to spend X on effective training than even 1/10(X) on ineffective training.**¹⁹

But what do IT professionals prefer? Overwhelmingly, IT professionals prefer instructor-led training: ILT is rated as the most favored training method by 68% of technology professionals.²⁰ 93% consider ILT to be as effective or more effective than other methods of training.²¹ And their bosses agree: 86% of executives say ILT is effective.²²

The intersection of items 1 and 2 is: instructor-led training. ILT is most effective, most cost effective, most efficient, and most desired by IT pros.

REALLY? ILT?

Yes, really. As we've stated, and as supported in the references and in previous papers,²³ instructor-led training is measurably far more effective than non-human-based training modalities for complex technical material. The technical professionals agree, and it is significant that the more experienced the professional, the *more* they agree.²⁴ Upon closer examination, it makes perfect sense. Those who have been around the block understand:

- There is much to be gained from formal classroom or pseudo-classroom instruction that is simply not to be found in quickie micro-courses or cheap videos. Only in traditional ILT environments does the learner benefit not only from the expertise of experienced instructors but also from that of professional colleagues from other enterprises.
- Learning that takes place away from the day-to-day production environment yields conspicuously more understanding and retention than learning that is delivered in small batches or in isolated moments stolen from a packed schedule.

Also, ILT offers obvious advantages over self-moderated training:

- 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.

Unfortunately, in certain circumstances, the instructor-led option is not practical. If a technology professional requires that training take place on nights or weekends, or in binge-watch mode, the instructor-led option, whether face-to-face or remote-live, may not work.

In such cases, however, typical e-learning or webinar options do not provide a solution that is even close to satisfactory. The cost of apparent convenience is too high: the student loses not only the controlled learning environment, the accountability, and the competition, but the critical interactive Q&A with instructors and peers. To be effective, complex technical training *must* be facilitated; the students *must* receive the necessary guidance and retain ability to ask specific questions of an expert. Therefore, HOTT, alone in the industry, offers self-paced training that includes an actual human instructor who is assigned to monitor progress and answer any questions throughout the training process. **Only by providing such a facilitator can self-paced training provide almost all the advantages of more conventional instructor-led training.**

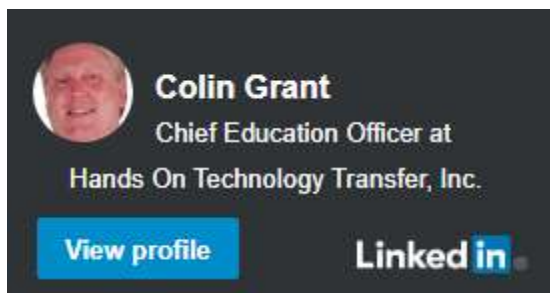
CONCLUSIONS

In the fiercely competitive business environment in which most of us live and work, it is imperative that we close the skills gap that is all too real. In the world of information technology, the obvious way to do it is to provide effective, efficient, cost-efficient training. And the way to provide such training is to eschew ineffective and seemingly inexpensive training in favor of proven methods. That means instructor-led training from experienced, trusted sources, and self-paced training that includes an active facilitator to answer questions and provide guidance.

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ENDNOTES

The sources below were consulted in the preparation of this paper.

Note: for WWW-based sources, we have included the dates on which we most recently accessed links so that should posts be deleted or links become inaccurate, readers can use the Internet Archive (<https://archive.org/web/>) to find sources.

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