

TRAINING MYTHS: FALSE BELIEFS THAT LIMIT THE EFFICIENCY AND EFFECTIVENESS OF TRAINING SOLUTIONS, PART 1

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This article questions commonly held beliefs about training as a component of performance improvement solutions. Rather than being based on theoretical and empirical support, many beliefs about training are based on little more than myth. Part 1 of this article presents myths about the relationship of training and performance and myths about determining training content. Training fails when the performance problem is caused by something other than a lack of knowledge or skill. And it is compromised when we fail to include only the essential content.

Myths aren't lies. They're beliefs that people adopt because they have an air of plausibility, people want to believe they're true, and they are consistent with at least some pieces of evidence. But of course, myths aren't true—or at least they're not the whole truth. Unfortunately, much of what people believe today about education is as mythological as anything from Homer or Aesop, even if it isn't nearly as poetic.

J. P. Greene (2005)

THE DECISIONS WE MAKE about the use of training as a performance improvement solution stem primarily from our beliefs about the effectiveness of different training approaches and methodologies. To effectively guide training solutions towards meeting desired learning and performance results, beliefs about training should be robust and empirically based. That is, the concepts and principles that undergird how we develop and deliver training should be rooted in research on training, not based on myths about training. Salas and Cannon-Bowers (2001) expressed this succinctly in saying that training professionals should “turn to the science of training for empirically verified guidelines regarding how to optimize training outcomes (including transfer)” (p. 492). Unfortunately contemporary training practice falls far short of this goal, and as a result the impact of training on performance is compromised.

Despite years of research into human performance and the development of technological means to deliver learn-

ing experiences, the majority of training still happens in a traditional leader-led classroom (“2006 industry report,” 2006). Carliner et al. (2006) report that many of our practices are not grounded empirically. Rather than looking to the best empirical evidence about how to design and deliver training, we instead rely on traditional training practices that have questionable effectiveness. Even when training is offered through technology, it is likely that the approach and methodology reflect traditional training approaches repackaged for delivery by some technology (Hannum, 2007).

This article questions many commonly held beliefs about training solutions. Rather than having theoretical and empirical support, many beliefs about training are based on little more than myth. It is not possible to trace the origins of each training myth, since some have been with us for quite a while. Perhaps at some point in the distant past, some of these myths were based on the best available evidence of that day, just as some older ideas that have been abandoned in other fields, from physics to medicine, were based on the best available evidence of their day. These myths are organized into three categories: myths about the relationship between training and performance, myths about training content, and myths about training methods.

Part 1 of this article presents the myths about training and performance and myths about training content. Part 2 will present myths about training methods and discuss how moving to empirically based training can prevent

these myths from hampering the results from training programs.

MYTHS ABOUT TRAINING AND PERFORMANCE

We usually design and offer training programs as part of systemic solutions to improve employees' job performance. Yet we rarely spend sufficient time exploring the relationship between training and performance. Here are some assumptions about training and performance that are more myth than fact:

- *If people are not performing well, they need training.* This is a starting point for many training initiatives and training courses. Some employees are not performing to expectations, so we provide training. The underlying assumption, rarely verified, is that the reason for any problem with the performance of employees is that they do not know something they should know or they lack some skill they should have. Certainly an employee who lacks essential job-related knowledge or skill probably is not a high-performing employee. But this is not the only, or even the most likely, reason he or she might not be performing well. As most HPT professionals know, many factors can hinder or prevent expected job performance (McCaffery, Heerey, & Bose, 2003). Lack of knowledge or skill is but one of these factors, although it is the only one that training can address. Employees may not be performing adequately because they lack tools or equipment. Their performance may be inadequate because they were not given clear job expectations or supportive supervision. Maybe no one has given them feedback indicating what they were doing that was wrong and how to change it. There may be policies or procedures within the organization that prevent acceptable job performance. Perhaps the person was placed in a job for which he or she does not have the right abilities or capabilities. The job performance may be unacceptable because of inadequate motivation or a lack of incentives to perform well. Even very good training will not remedy these types of problems. Training can be a part of improving job performance only when a performance deficit arises from a true lack of knowledge or skill on the part of an employee. Training has little or no impact when the performance problem has other causes.
- *Training should be separated in time and space from work.* For years we have maintained a separation between training and work just the way that public schools separate school from the rest of life. We pull someone from their job and send them to a training course with the hope that when they return, they will perform their work better. In many occupations, we have predeployment training in which we do not let people start a job until they have gone to the training location and completed the training program for that job. As with other training myths, this one is intuitively appealing but questionable. When work and training are separated, people have problems learning, retaining, and applying the training (Paloniemi, 2006). In short, learning requires context. Something that is taught in the context of its use will be retained longer and used appropriately more often (Schell & Black, 1997; Greeno, 1998; Wilson & Myers, 1999). We do not learn things in isolation; rather, we learn and retain new concepts in networks of other concepts. We derive meaning through these associations. Something that is taught in the environment in which it is used will be learned in that context with all those associations, remembered in that context, retained and recalled in that context, and applied within that context. Separating training from work damages these connections and compromises training effectiveness (Chappell, 2005).
- *If they learn it, they will use it on the job.* We often assume that if people successfully learn something during training, they will use it on the job. Unfortunately this is often not the case. For successful learners to become successful job performers, the training content and the training environment have to match the job such that everything employees do during training matches perfectly what employees do in their jobs. Rarely do training programs have this perfect match with jobs such that an employee could step from one to the other without perceiving any difference. Also, the employees being trained have to remember and transfer all they are learning to their jobs. Such is rarely the case in training solutions (Shoobridge, 2002). Successful learning does not automatically guarantee equally successful job performance. Besides, as Carliner et al. (2006) point out, learning is only one way of improving the performance of the workforce, not the only way.
- *The more you learn, the better you perform.* We expect our best students to be the best performers. Yet years ago, a meta-analysis of 108 research studies found only a small correlation, 0.18, between college grades and various measures of success as an adult (Cohen, 1984). The best medical students rarely become the best doctors (Fruen, 1983; Wingard & Williamson, 1973; Borowitz, Saulsbury, & Wilson, 2000), and the best MBA students rarely become the best businesspersons.

In fact, some of the most successful businesspeople are college dropouts. Bill Gates and Michael Dell are two well-recognized examples, but there are a number of other billionaires running successful businesses who did not complete college. Being a student and being an employee require different sets of skills. Although the correlation between knowledge gained during training and subsequent job performance might be positive, it is far from perfect. To the extent that the training is high-fidelity training that better matches the job environment, this difference between training and job performance lessens but does not evaporate. This is not to downplay the value of what someone learns during training. It is just to point out that more knowledge does not equate with better performance.

Even the best training solutions cannot solve all problems with job performance. For performance problems caused by something other than a lack of knowledge or skill on the part of the employees, training is not likely to have any detectable impact.

When we do not understand the relationship between training and performance and expect results from training solutions that they will not be able to accomplish, we oversell training and underdeliver the results that are expected. In doing so, we waste training dollars and damage the credibility of training programs and training departments.

MYTHS ABOUT TRAINING CONTENT

How we determine what content to include in the instructional design of a training solution is an important decision that affects its organizational value. If we include the wrong or unnecessary content or fail to teach the appropriate content, the quality of the training is compromised and any potential impact on job performance is lessened. Ideally we should base decisions about training content on a careful task analysis once we determine that a performance problem is most likely the result of a knowledge or skill deficiency (Jonassen, Tessmer, & Hannum, 1999). Unfortunately, often this is not the case. Here are some assumptions about training content that are more myth than fact:

- *All learners need the same training content.* In the Preface to his educational psychology book, Ausubel (1968) wrote, “If I had to reduce all of educational psychology to one principle, it would be to first determine what the learner knows, then teach him accordingly” (p. vi). This expresses what we have long known about learners: they differ vastly in their initial knowledge, and taking these differences into account is vital for successful instruction. Any one-size-fits-all training program that ignores

this fact will have limited success at best. Learners bring to training a range of prior knowledge—to say nothing of their varying abilities, interests, and motivation. Learners who come to a training program with considerable prior knowledge of that content will become bored, maybe even frustrated, that we are teaching them what they already know. So they leave physically if possible or mentally if attendance at the training event is required. At the opposite end are learners who are at the lower end of the spectrum of knowledge or skill with regard to the training content. Some portion of the training content will likely be over their heads since they lack the foundation knowledge. Because new knowledge and skill build on preexisting knowledge and skill, introducing new knowledge and skill to learners who do not possess the prerequisites is doomed to fail (Gagné, 1985). Besides failing, this reduces their sense of self-efficacy and thus the amount of effort they will expend during training. Ignoring the variability in prior knowledge and trying to teach the same content to all is neither an effective nor an efficient way to run a training program.

- *Content experts know what to teach.* Organizations often involve subject matter experts in making decisions about what content to include in training programs. We assume they would know what content to include in training. We should involve content experts or subject matter experts in the development of training programs to ensure that the content we plan to teach is factually accurate. However, having a subject matter expert dictate the content of a training program is not the best way to approach a learning need. In many cases, these experts will include in the training all, or nearly all, the content they know about their topic. In essence, they are saying that to perform a procedure or some task associated with a job, those who are being trained must know all that the subject matter expert knows. This is akin to having automotive engineers design training for drivers’ education or having cardiologists design training for emergency medical technicians learning how to deal with heart attack victims. The resulting training program is likely to be factually accurate, which is important, but bloated with content that is not essential to performing the tasks that make up their jobs. We should approach the design of training curriculum from the perspective of what is the least we can teach and have learners perform adequately rather than from the perspective of what is the most we can teach (Carroll, 1990a, 1990b). The focus should be on the job performance for which people are being trained. We should teach all the content necessary for an adequate performance while eliminating any and all excess content.

Content experts rarely approach decisions about training content from this perspective.

- *Expert performers know what to teach.* While expert performers usually have a different perspective from that of subject matter experts, expert performers often make poor decisions about training content. This follows from the nature of expertise. True experts work or perform intuitively, not according to a step-by-step algorithm (Rauterberg, 1995; Hogarth, 2001). Skilled performance happens quickly in the moment, seemingly without thought. Chi, Glaser, and Farr (1988) wrote of people with expertise as responding smoothly, automatically, and unconsciously. Wonderful athletes like Michael Jordan and the late Ted William have gifts beyond what the rest of us have. A study of the reactions of baseball player Albert Pujols showed that his reflexes and reaction times were at the top of the human population (Herbert, 2007). Even if Pujols understood exactly what he did to hit a baseball so well, the rest of us, including many very good athletes, still could not come close. Expert performers make poor training developers for these reasons: their expertise has become intuitive, they do not understand what they do or how they do it, and they often have skills at the extreme end of the human spectrum.
- *More content produces better performance value.* More content does not equate with better training, more learning, or improved performance (Mayer, Bove, Bryman, Mars, & Tapangco, 1996). In fact, as training content grows, learning and performance may suffer. Increased training content not only increases the length, and thus the costs, of training initiatives, it also adds an extra burden for the learners. They have to sort through, figure out, comprehend, and understand the additional content. Learners find it difficult to decide what content is truly important and essential to their jobs and what is nice-to-know content. In addition, there are limits to what humans can take in, especially given the constraints of short-term memory (Woolfolk, 2006). When people are presented with too much content, some of that content does not make it into their long-term memory due to capacity problems in short-term memory and processing difficulties.

Carroll (1990b) described a minimalist approach to training that aims to improve performance results from training by teaching less, not more. His advice is to restrict the amount of training content to increase learning outcomes. While this initially sounds counter-intuitive, it is necessary to avoid confusing and overwhelming learners. We should not include content in training that learners already know, that is not essential for performance, that they can and will easily learn once on the job, and that is not specifically related to

learning objectives that are tightly linked to job performance (Hannum, 2003). This represents a departure for many trainers, who are used to teaching as much as they can. We should apply a concept from medicine: the concept of the right dosage. Too much training can be as bad as too little.

These represent some of the myths about training content that depress the results that can be obtained from training solutions that get the content right. Unfortunately many training initiatives make content decisions, in whole or in part, based on these myths. The result too often is content bloat in which the training curriculum includes considerable amounts of nonessential content. Failing to control content bloat results in training that will predictably take longer, cost more, and deliver fewer results in terms of both learning and performance.

In part 2 of this article, I will present myths about training methods and present a call for evidence-based instructional design practices as a way to avoid reliance on training myths that impede achievement of our desired results. 🌱

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