

Instructional Technology to Performance Technology

Elizabeth Bailey

IPT 536  
Dr. Yonnie Chyung  
February 23, 2003

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### **INTRODUCTION**

Over time, we in the instructional industry have seen a change from teaching someone how to do things to teaching someone how to do things well. To understand this change, we need to understand concepts, how these concepts work together, how we moved from one concept to the next, and who helped us to get to this point.

### **INSTRUCTIONAL TECHNOLOGY AND PERFORMANCE TECHNOLOGY**

Instruction is the process or art, depending upon your view, of teaching or sharing information from one person to another, or from something to a person, in a detailed manner. Technology can be identified as the science of studying data and the processes of working with data using mechanical means such as black and white boards, overhead slides, televisions, VHS players, DVD players, computers, and even the Internet. As a field, combining instruction and technology makes Instructional Technology (IT) the study of a science of the combination of sharing information from one person to another using data and the processes of working with data using machines. This field allows specialists to study how instruction can be improved using technology.

Using the same definition of technology, we can move to the definition of performance. Performance is known as the process of doing something. Combining technology with performance makes Performance Technology (PT) the study of the combination of a science of how we go about doing something using data and the processes of working with data using machines.

According to Allison Rossett, performance technology is “improving human performance by taking a hard and fresh look at how the organization and individual work together to achieve business results. An attempt to achieve business and organization results through strategies that improve and align organizational performance” (Rossett, 1999, par. 1). Somehow, our original definitions have changed from simple to organizationally oriented.

### **THE RELATIONSHIP BETWEEN INSTRUCTIONAL AND PERFORMANCE TECHNOLOGY**

People outside of the studies of instructional technology and performance technology may indicate that these two are simply related through technology. However, those who have studied the two know better. Technology has been defined as hardware of sorts, where there is a multitude of media from which to choose. Instruction can be a method of sharing knowledge from one person to another, or from one thing to a person. Performance, again, can be known as the process of doing something. These are all definitions without relationship.

If you considered a relationship, you might consider technology combined with instruction. If technology is compiled with instruction, you would have the transference or sharing of information from one person to another, or from one thing to another, when using one of the media listed above, as an example. You might consider instruction combined with performance. Perhaps instruction would lead to a performance. You might consider a relationship between technology and performance. One could use technology to enhance a performance. So, this comparison is a simple relationship.

There is a greater relationship in place. Let's consider Thomas Gilbert and his saying "worthy performance" (1978, p. 73). He has established that for a performance to be worthy, it must be the "best instance of the performance" in history (Gilbert, 1988, p. 49). This would indicate that the performance must be measurable. With that in mind, can instruction be measurable? Slowly over time, we have moved from simple instruction to the question of worthy instruction. We may want to identify what someone has learned or if they have learned. Assessment of instruction has become necessary. Continuing with that line of thought, previously compiled was instruction leading to performance. If worthy instruction is in place, would there be worthy performance? Not necessarily. Using Gilbert's theory, we would have to identify the best instance of that performance regardless of the instruction. Can there really be an instance of worthy instruction that would result in worthy performance? Let's consider this a little further.

## **THE PARADIGM SHIFT FROM INSTRUCTIONAL TO PERFORMANCE TECHNOLOGY**

Using performance as our key term, we know that processes are usually step-by-step procedures used by someone to achieve a goal. Considering Rossett's definition, we can believe that these procedures would be focused on ensuring that the results were profitable for the organization and the individual. These procedures would need to be educational to allow people to learn from them while applying them and even possibly allow them to learn to apply the procedural concepts to other issues.

The procedures at the conclusion will result in some goal. This goal may even be aligned with the organizational direction – something that could be a systematic set of processes. Again, how is this different from instructional technology?

The performance aspect comes closer into play when applying a quantifiable aspect. Not only do the results have to be in alignment with the organizational goals, but also they must ensure that these goals are measurable. Using a systematic process, we should have defined steps where these steps can be evaluated and where the achievements of one step is the precursor to following steps which outcomes are also measurable.

From IT to PT we have instruction with the steps identified, but continuing to the measurement of success. Using technology and instructional methodologies, we can analyze, design, implement, and evaluate the processes used in reaching the established goals. As improvements are identified, the processes can be changed to ensure success.

## **CONTRIBUTORS TO THE PARADIGM SHIFT**

One of the first people that influenced a shift from instructional technology to performance technology was Frederick Taylor. Frederick Taylor, born in 1856, initially a machinist, provided consulting services during his research of production that offered

solutions to manufacturer's production woes. He had a phenomenal idea attempting to find a way that would allow both an employee and employer to succeed while providing equal services to each other – the employee provides a service called work to the employer and the employer would provide a paycheck. During Taylor's research, he discovered, or knew from experience, that workers did not always provide an equal service to that of fellow employees or that the service equaled what the employer was paying. Through his research, Taylor discovered several basic ideas that, if employed, would generate a healthy relationship, or "maximum prosperity" between employer and employee (Taylor, 1911).

These ideas of Taylor's included developing a process, or science, to replace the guesswork involved in performing specific work. He believed in properly selecting employees based on their skills and physical makeup to allow them to perform better in a role, teaching employees how to do their jobs with detail instructions, using training to enhance skill sets, dividing the workload so that each employee is responsible for his or her own work, having defined rewards and consequences for the performance, and ensuring that management does just that – manage – while the employees work. Taylor believed that these simple, scientific principles placed into a work environment could create better results than other existing methods of management, including the known practice of managers hoping that employees would see the need for effective and efficient performance rather than placing skills requirements, training, and workload separation to incite workers to perform well (Taylor, 1911).

In conducting his research, Taylor (1911) evaluated the men performing specific work to see if they were capable of doing the job; he evaluated their desire to perform; and he discovered a motivation that would cause them to want to perform well. Taylor offered them explicit instructions as to what to do, how to do it, and when to do it and completely defined these efforts in a paper called *The Principles of Scientific Management*. He intended that by providing this level of detail he could prove "that maximum prosperity can exist only as the result of the determined effort of each workman to turn out each day his largest possible day's work (Taylor, 1911).

Looking back to Taylor's paper presented in 1911, Taylor did each of these things. Taylor collected *data* when he defined the maximum workload of the best employee through "accurate records ... of the amount of work done by each man" (Taylor, 1911); he defined a process to the minute detail of how to do the work including break times. Taylor offered the proper work utensils (*instruments*), such as the proper width and breadth of shovels, with which each man could perform the labor. He offered monetary awards and monetary penalties as *incentive* to perform the labor as expected. He explained and taught each worker how to do his job (*knowledge*). He selected employees based on physical appearance (*capacity*) and divided the workload based on their skills and abilities, not their likes and dislikes of the positions. Taylor maintained records on their performance and timing of their performance and defined the policy that "those who fail to rise to a certain standard are discharged" (Taylor, 1911). When, and if, an exemplary employee ever believed that money was better elsewhere, he was welcome to go to that position knowing that when he became dissatisfied, he could return to his position on the team.

Along the same lines, Thomas Gilbert had the idea that performance of work could be considered "worthy" (1988, p.49) if, by comparison as Taylor used, the

performance was considered to be above standard. So, just as Taylor identified the maximum amount of work a person could turn out in a day, Gilbert believed that all people could be compared against the best performance, or maximum performance, of any other individual. The individual with the best performance was offering the most worthy performance. However, rather than focus on the behavior, or the pieces of action performed by the individual, Gilbert focused on the results of that behavior – the accomplishments. In comparison, this focus on accomplishment was similar to what Taylor did. Taylor wanted the maximum workload from a single individual, as did Gilbert. Gilbert simply went farther in his scientific application of his ideas in defining a mathematical measurement of the idea.

Gilbert defined a potential for improving a performance in a mathematical calculation so that dollars could be associated with a performance and could be defined as improvable. Any action in comparison with the best possible action can be considered a range of ability to improve. In Gilbert's terms, the potential for improving performance (PIP) is equal to the best performance divided by the typical performance [ $PIP = W_{ex}/W_1$ ] (1988, p. 49). To get to this PIP, a number has to be associated with a performance or task. Explanation can best be offered through example. If a teller at a bank is to process customer's deposits and withdrawals efficiently, the largest count of customers ever handled by a single teller would be divided by the average number of customers serviced by any one teller to define the amount of improvement that could be had. If teller A, the worthy performer, handled 100 customers [ $W_{ex}$ ] within a specific day and the average number of customers handled by all tellers was only 50 customers [ $W_1$ ], the PIP would be 2, indicating that the average tellers could improve by at least 2. So, once the average of all tellers became 100, moving the PIP to 1, the potential for improvement would be met.

Gilbert continued to provide additional ways within his behavior engineering model to identify methods of improvement that further defined the principles provided by Taylor. Gilbert references six factors of his behavior engineering model as separated into two areas: environmental supports and a person's repertory of behavior (1978, p. 88). Within the environmental support area, people rely on data being received, require instruments on which or through which they perform work, and need incentive to work. Each of these things comes from outside of the person. Within the person, there are three things that are needed: the knowledge to perform a task, the physical ability (capacity) to do so, and the motive to do so.

The work of these two men was the beginning of the shift from instructional technology to performance technology where we went to performance technology.

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