Increase ROI Through Performance-Based Learning

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Abstract

Performance-based learning can offer cost savings as well as increased knowledge retention. Definitions of performance indicators and learning must be well-defined prior to cost comparisons of learning methods. This paper focuses on defining Return on Investment (ROI) and performance-based learning as well as demonstrating how over 250,000 users — from major universities to Fortune 500 companies to those learning at home — have reduced their learning time by at least 50 percent while increasing their retention of the material. Examples include how performance-based learning has increased ROI in specific situations where the unique overlaid hands-on video learning of SofTutor was used.

Introduction

During these uncertain economic times, many in corporations may argue that training is unnecessary and that work should be assigned only to those whose skills are suited for the work. However, this attitude can be costly when the loss of employees or the decrease in employee morale is considered rather than building knowledge (which encompasses facts and skills) and expertise within an organization. Therefore, measuring the effectiveness of learning is essential. Most difficulties in doing so ensue from incompatible definitions of Return on Investment (ROI) and learning. Performance-based learning attempts to define ROI and measure learning effectiveness.

Return on Investment (ROI)

Companies utilize multiple performance indicators to determine the efficiency of their expenditures. Common ones include Benefit-Cost Ratio (BCR), Return on Investment (ROI), and Payback Period. The calculations for each are provided.

BCR Calculation

$$BCR = \frac{\text{Program Benefits}}{\text{Program Costs}}$$

ROI Calculation

$$ROI = \frac{\text{Program Benefits} - \text{Program Costs}}{\text{Program Costs}} \times 100$$

Payback Period Calculation

$$\text{Payback Period} = \frac{\text{Program Costs}}{\text{Annual Cash Flow}}$$

Personal preference often determines which is employed, but ROI is the most often used, since the BCR method ignores non-monetized impacts and Payback Period method ignores benefits occurring after the period as well as the value of money. ROI can be modified to avoid these issues. However, when using ROI, explicitly define all costs and benefits to avoid confusion. So, for the purposes of this paper, ROI is defined as that which increases workers efficiency whether that is by reducing labor costs associated with training, reducing support costs or increasing job satisfaction.

Many definitions exist as to what is a good Return on Investment or ROI. Some would set it at the same level as other investments or 15%. Others would set it higher at 25% or at a break-even 0%. But, the best ROI is one that is set at the client's expectations.

Although many believe that management only cares about financial ROI, line managers are actually more flexible than learning professionals about what constitutes evidence of effectiveness.[1] Some other measures for learning ROI might include reducing the time and labor costs spent learning, skills, knowledge, competencies, capacity and length of employment.

Performance-Based Learning

> 10% of what they READ
> 20% of what they HEAR
> 30% of what they SEE
> 50% of what they HEAR and SEE
> 70% of what they SAY or WRITE
> 90% of what they SAY AS THEY DO AN ACTIVITY
> *Institute for Applied Behavioral Science[2]*

The above quote, although controversial[3], illustrates what most people know instinctively. Most knowledge comes from performing a task rather than just reading, hearing or seeing. However, most training focuses on learning facts or information through reading, lecture or demonstration. Performance-based training is different.

> *Performance-based training* emphasizes proficiency in essential job tasks. The curriculum is based on precise tasks learned in sequence and tested against a criterion of competent performance. Training is often coupled with *functional context learning*, which uses the knowledge and skills demanded by a job as a basis for instruction. Efficient improvement of employee performance is the main goal.[4]

Performance-based training attempts to address specific deficiencies or the addition of new skills. Focusing on outcomes rather than information, features or functions, it sets expectations while teaching new skills and knowledge. Knowledge in this sense is how effectively the learner can apply information

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[1] Charlton and Osterweil. Measuring Return on Investment in Executive Education. *The Ashridge Journal, Autumn 2005*.

[2] Institute for Applied Behavioral Science, 300 N. Lee Street, Suite 300, Alexandria, VA 22314. 1-800-777-5227.

[3] Thalheimer, Will. *People remember 10%, 20%...Oh Really?*. Will at Work Learning. Accessed July 19, 2010 at http://www.willatworklearning.com/2006/10/people_remember.html

[4] Belfiore, Mary Ellen. Understanding Curriculum Development in the Workplace.

(or raw facts). Or, as Dan Burrus stated "Information is not knowledge until and unless it is applied effectively."[5]

A classic example of performance-based training is teaching how to create a building or part diagram in AutoCAD rather than just showing the features and functions of AutoCAD. For communication skills, learners would be shown how to negotiate contracts or resolve customer problems, rather than just being given general communication facts with the onus on the learner to figure out how to apply this information. So, performance-based learning can increase employee efficiency, lessen new employees orientation time or introduce new directions to existing people, and increase the overall efficiency of the organization by reducing the labor costs associated with training.

SofTutor

> I hear, and I forget.
> I see, and I remember.
> I do, and I understand.
> *Ancient Chinese proverb[6]*

This ancient proverb captures the frustration with e-Learning that led to the creation of SofTutor. Traditional e-Learning requires a lot of reading, listening to lectures or watching demonstrations without understanding how this information can be synthesized into useful knowledge. Performance-based learning techniques should reduce the training time and increase retention, but the difficulty lies in how to offer these techniques without an instructor for every learner.

As shown in Figure 1, SofTutor's performance-based training method offers a unique overlay that shows the student what to do, and allows for following along with the instruction in the actual application being taught. This method should reduce confusion, since learners watch the steps being performed rather than just read about the steps which can be subject to interpretation. It should also reduce training costs related to time away from the job, and increase job satisfaction as it relates to computer and process-based tasks.
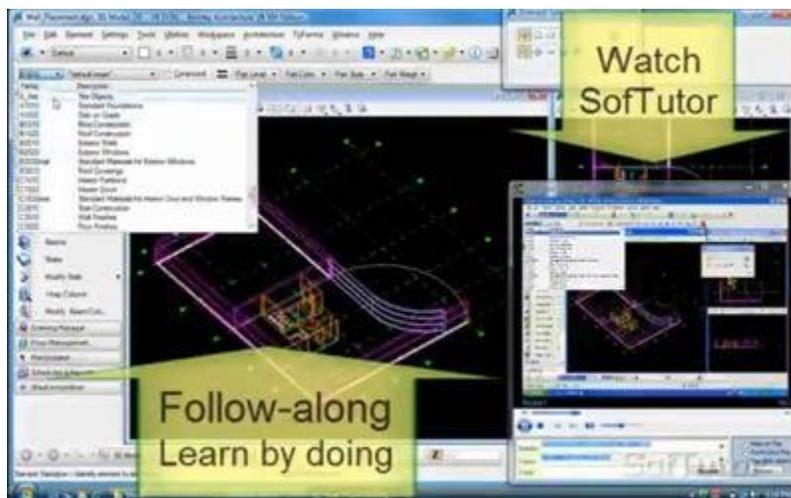

Figure 1: Unique, overlay feature of SofTutor

[5] Burrus, Dan. *Futureview.* 1989
[6] Watson, Frank. I do…I understand, p.1.

As shown in the next section, companies, universities and individual learners have increased their knowledge and ROI while using SofTutor.

Specific Examples Showing Increased ROI

Note that in this section, ROI has been calculated with the following formula.

$$\text{ROI} = \frac{\text{Cost of learning (labor \& training) w current method}}{\text{Cost of Learning (labor \& training) w performance based method}} \times 100$$

Big Ten University

The graph in Figure 2 is based upon information from an instructor in a Big Ten University who used SofTutor as a replacement for the standard classroom lecture, demonstrate and try method of learning MicroStation. Students covered more topics and retained more of the information when using the performance-based training techniques of SofTutor.

Learn More in ½ the Time!
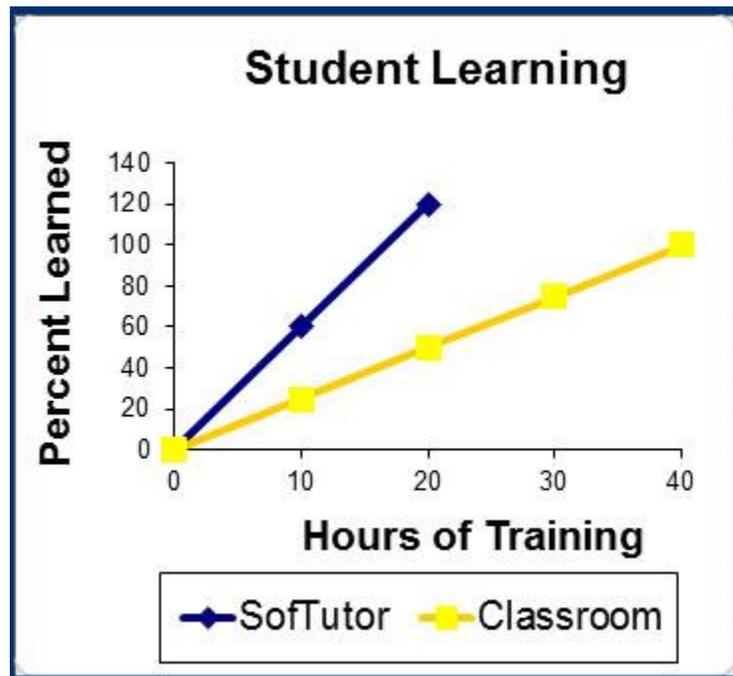
**Our students learned more in ½ the time with SofTutor
as opposed to classroom training. – Big Ten University**

Figure 2: Big Ten University Comparison of Learning with SofTutor vs Classroom

Employee at a large consulting firm

After being recruited, a friend started working for a large consulting firm. On the first day, she was given no training in how to use the systems that she needed to perform her tasks. As is typical, she had an employee orientation where she signed all of the benefit forms (after 15 to 30 minutes of information as to what all of her options were) and was shown the basic layout of the office. Every time she needed to perform a new task, she had to find the person who previously held her position to determine what steps needed to be taken. If the person was unavailable (either in a meeting or out for the day), that task could

not be performed until she received more information. She hated this job and quit after 18 months since she did not feel productive. After learning about performance-based training, she mentioned that if it had been available, she would not have quit and the company would have had greater productivity.

Single Person Learning MicroStation

The graph in Figure 3 shows estimated costs for learning how to use MicroStation via various methods. Video recordings of the software in action (or screen captures) are the most cost effective methods. The performance-based learning techniques of SofTutor are the least expensive.

Total Cost of Learning MicroStation
One Week Equivalent - Cost per person, Labor Cost @ $25/hr

Method	Cost of Training	Cost of Labor
Classroom off site w/o travel	$2,400	$1,000
Classroom on site w Consultant (per/person)	$1,200	$1,000
eLearning (text based)	150	$1,500
Book	30	$1,500
eLearning (video based)	$300	$900
Youtube	0	$950
SofTutor	$399	$400
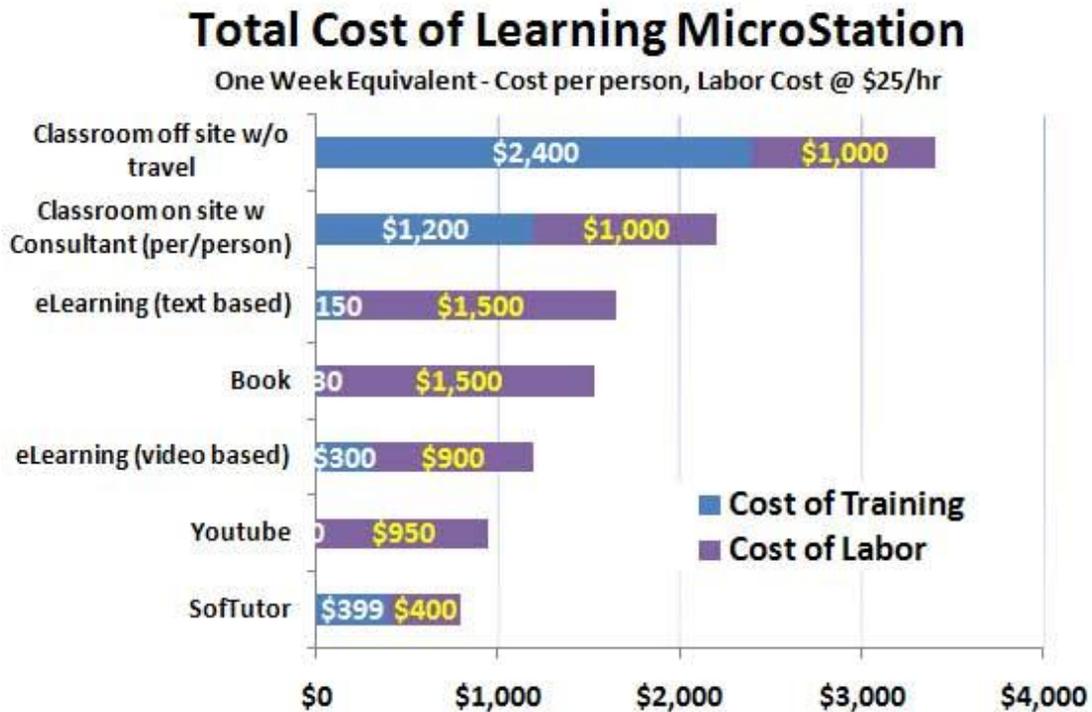
Figure 3: Estimated Costs for Individual MicroStation Learner

Conclusions

Most people retain more knowledge if they understand why they are learning the information through the accomplishing of specific tasks. Performance-based training builds upon this by offering learners information during the demonstrations and task completions. Therefore, performance-based training can offer large ROI while increasing knowledge retention.

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About the Authors

Randolph Hilgers

With a background in physics research and computers, Mr. Hilgers has been instrumental in developing systems to improve efficiencies in human performance. Mr. Hilgers received several awards while at AT&T and Intergraph for process engineering. In the early 90s, Mr. Hilgers founded New Vision Software (NVSI) with the goal of making learning more enjoyable by using technology to reduce the time it takes to learn while increasing retention. Mr. Hilgers re-engineered the learning process to develop a proprietary system under the SofTutor brand that has been used to train and provide technical support for several hundred thousand users from over 1,200 companies in 34 countries. In 2008, NVSI released their 3rd generation learning system which greatly reduces the time it takes to create content.

Diane Tarkowski

With a background in biological and chemical research, marketing communications, training and computers, Ms. Tarkowski investigated many topics including Newcastle's Disease, AIDs and polymers. Her safety and marketing brochures were used by many as standards within the industry. At DePaul University in Chicago, IL, she implemented procedures for the mass reimaging of computers and decreased the amount of time that it takes to install new instructional software by more than 75 percent. Ms. Tarkowski also presided over the recarding of 30,000 faculty, staff and students with recognition for excellent customer service. She instituted iTunes University at DePaul University and has taught many instructors and students in its use. She introduced many faculty and students to podcasting and creating their own video and audio podcasts. Ms. Tarkowski has also successfully implemented new training software training strategies at DePaul. She has authored multiple papers at AACE E-Learn and Ed-Media describing the innovative training methods.