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Michael F. Kosloski
Old Dominion University

Philip A. Reed
Old Dominion University

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**DETERMINING RETURN ON INVESTMENT FOR PROFESSIONAL DEVELOPMENT
IN PUBLIC EDUCATION: A MODEL**

Michael F. Kosloski, Jr., MS Ed
Old Dominion University
Education Building, Room 228
Norfolk, VA 23529
mkoslosk@odu.edu
757.683.3314, 757.683.5227 (fax)

Philip A. Reed, Ph.D.
Old Dominion University
Education Building, Room 228
Norfolk, VA 23529
preed@odu.edu
757.683.3314, 757.683.5227 (fax)

Abstract

Return on investment with respect to employee training is a growing phenomenon in business and industry, as understanding the impact of training on an organization is often not enough. Public educational systems also spend a significant amount of resources on professional development. However, because education is a non-revenue generating industry, rarely do we analyze return on investment in the educational sector. This article examines return on investment for public school teacher training and professional development. While this model was developed for a specific school system and software, the model outlined below may be used by administrators in many non-profit or social organizations to determine a professional development return on investment.

Introduction

In October of 2008, a large suburban public school system identified a six-year strategic plan for student success predicated on student outcomes, with the primary focus being on teaching and assessing the skills that students will need to thrive as 21st century learners (Author, 2009a). The strategic plan identifies the following five objectives:

1. All teachers will engage every student in meaningful, authentic and rigorous work through the use of innovative instructional practices and supportive technologies that will motivate students to be self-directed and inquisitive learners.
2. ██████ will develop and implement a balanced assessment system that accurately reflects student demonstration and mastery of ██████ outcomes for student success.
3. Each school will improve achievement for all students while closing achievement gaps for identified student groups, with particular focus on African American males.
4. ██████ will create opportunities for parents, community and business leaders to fulfill their essential roles as actively engaged partners in supporting student achievement and outcomes for student success.
5. ██████ will be accountable for developing essential leader, teacher and staff competencies and optimizing all resources to achieve the school division's strategic goal and outcomes for student success (Author, 2009b)

The fifth and final objective noted above identifies teacher and leader development as a tool for student success. Therefore, within the framework of this strategic plan, this research focuses specifically on the development of a strategic plan for this large suburban city's marketing education teachers, and outlines the goals, objectives, and timeline for implementation of computer training for the city's marketing education teachers. It concludes with a model for evaluating the professional development training, including a systematic approach to determining return on investment for funding computer training.

Recently this large suburban school system converted from Microsoft Office 2003[®] to Microsoft Office 2007[®]. Because of the new knowledge and skills required by users, as well as the amount of time required to learn the new software, the conversion has negatively impacted teacher's planning and preparation efficiency (Martin, 2009). The consequences of not training for inadequate performance can result in inefficiency and operational problems (Phillips, 2003, p. 216). As a result, it is critical for this large suburban school system not only to determine the effectiveness of such training, but also to determine whether the resources invested into professional development provide a reasonable return. For the sake of this research, return on investment is defined as the actual net monetary value of professional development, generated by comparing programs costs to benefits (Phillips, 2003). The importance of measuring such a return is two-fold. First, those responsible for the appropriation of funds must necessarily take accountability for their expenditures. Second, a determination of such appropriations and their returns can help to determine whether to increase or decrease the proportion of those funds expended on professional development.

Goals for the Strategic Plan

Goals are defined as major milestones that generally have a two- to five-year or longer horizon (Author, 2009c). With this in mind, the following goals have been created for this large suburban school system's strategic plan:

Goal 1: Create a series of workshops, utilizing a systematic approach that will be an ongoing source of professional development.

Goal 2: Develop a user-friendly computer-based training system so that teachers rely on the computer-based system as their primary referential resource.

Goal 3: Generate a mentorship structure within this large suburban school system.

Goal 4: Apply computer skills and knowledge to on-the-job tasks (Author, 2009a).

Objectives

Objectives are similar in nature to goals. However, objectives are based on intended outcomes of less than one year. In addition, there are often multiple objectives to help reach a goal (Author, 2009c). As a result, the following objectives have been developed for each of the goals noted above:

Goal 1: Create a series of training workshops.

- Objective 1: Identify times and dates for workshops so that all marketing education teachers may attend without work schedule conflicts. Teacher attendance should increase to a minimum of 90%.
- Objective 2: Develop topics and agendas for workshops based on the immediate needs so that the most commonly utilized tools for teachers are addressed and mastered early in the series.
- Objective 3: Identify expert teachers, staff, or educational leaders to develop, present, and assess workshop content.

Goal 2: Develop a computer-based training system.

- Objective 1: Contract a computer-based training expert to develop an online delivery system for marketing education teachers via the World Wide Web.
- Objective 2: Create a series of user-friendly learning modules that can be accessed from any location.
- Objective 3: Heighten teacher cognizance of the existing online learning modules.

Goal 3: Generate a mentorship.

- Objective 1: Survey marketing education teachers for existing knowledge and skill levels, as well as willingness to take part in a mentorship for other marketing education teachers.
- Objective 2: Develop a hierarchal structure for teacher mentorships.
- Objective 3: Develop incentives for mentors so that mentors are actively engaged with those who require assistance.

Goal 4: Apply computer skills and knowledge to on-the-job tasks.

- Objective 1: Identify where increased computer skills and knowledge apply to all facets of the teaching profession.
- Identify successful on-the-job applications of acquired computer skills.

Strategies and Timeline

The need for improved computer skills for marketing education teachers is immediate. As quickly as marketing education teachers can effectively apply computer skills and knowledge, efficiency will increase. As a result, the implementation of the goals and objectives should necessarily be immediate, prioritizing them based on the most commonly used skills and knowledge.

Goal 1: Create a series of training workshops.

One issue with the existing professional development structure for this large suburban school system's marketing education teachers is that participation is optional, and attendance is often poor. Several action items may be implemented to increase attendance, with a target goal of 90% attendance. The first, and possibly most important consideration, is the time and date of the workshops. Teachers are more likely to attend if they understand the value of the training, as well as if they can attend without sacrificing personal time (Martin, 2009). Workshops may be better attended if they are scheduled during late afternoons when teachers are able to attend during school hours. Another option is to deliver them immediately when the workday ends by offering the courses via videostreaming, utilizing online collaboration tools such as Adobe Connect. This permits the teachers to eliminate travel time and still receive training within the confines of their contract schedule, thereby not infringing upon their personal time. Monitoring may take place simply by tracking teacher attendance. Times and dates should be identified and communicated a minimum of 30 days prior to the onset of the school year.

To identify the immediate training needs, as well as to identify potential workshop presenters, teachers should be anonymously surveyed using a simple form located on the World Wide Web. Teachers will be asked a series of questions regarding the following topics:

- What they believe to be their most immediate need with respect to computer training.
- Identify tasks seem to be routinely the most tedious and time consuming.
- What they feel their own proficiency level is on a list of specific task categories
- Whether or not they know someone within this large suburban school system who may be considered an expert in related computer usage.

The survey should be distributed and collected prior to the end of the current contract year. Data should then be immediately compiled and analyzed for content, existing levels of proficiency, and assistance in identifying potential experts to develop and deliver instruction.

Goal 2: Develop a computer-based training system.

Once content areas are identified, a contract should be negotiated with an expert in computer-based training. Modules for each task learned should be segmented and sequenced for on-demand access, providing teachers with an on-demand multi-media reference. It is imperative that the modules be intuitive and user-friendly. A video-based, as well as a text and graphics based resource should be developed. Because the immediate development of an entire series may not be possible, the data from goal 1 should first be analyzed, and module selection and development prioritized. Each module should be available on the Web at least one week prior to workshop training. The first module should be completed two weeks before the onset of the school year, and at least one module should be added to the training by the 15th of each month. Modules may be updated as needed. To assess the impact of the computer-based training, statistics should be monitored for both the number of times accessed, as well as the length of stay per visitor (stickiness). The online training should be announced at the initial workshop, and a typical module demonstrated. Teachers should be able to locate and access any module from the home page of the Web site.

Goal 3: Generate a mentorship.

Potential mentors are developed through the survey noted above in goal 1. Mentors should be selected from marketing education teachers if the proficiency and willingness levels are high enough. If not, others may be solicited. Mentors are assigned particular areas of expertise rather than individual mentees, and will be approached on a content basis. As a result, a teacher may direct his or her questions to more than one mentor based on the knowledge needed. Incentives are developed for mentors to ensure that they remain actively engaged with those needing assistance. Incentives may vary, but some considerations are intrinsic recognition, time off of work, conference travel and registration assistance, and physical awards. Incentives

should be tailored to the desires of the specific group of mentors. The initial mentor must be in place no later than thirty days prior to the onset of the school year. Subsequent mentors should be in place thirty days prior to their corresponding workshops. Evaluation for mentorships is discussed below as part of goal 4.

Goal 4: Effectively apply computer skills and knowledge to on-the-job tasks.

Following each workshop, teachers are asked to keep a continuous journal noting each time they have applied the skills learned from any of the three methods of instruction (workshops, computer-based training, and/or mentors). They are asked to specifically document how they applied the technology, how it helped to improve their efficiency, and how they might apply this knowledge to other areas of their work. A “sharing session” will be initiated at the onset of each subsequent monthly workshop, discussing applications of the previous month’s content. Teachers will be encouraged to share how they have applied any previous workshop’s content to their job tasks, how it has improved their performance (i.e. time saved, new presentation method, etc.), and how they best internalized the newfound knowledge (workshop, computer-based training, mentor, or combination). Those contributing receive recognition or incentives, not only encouraging everyone to participate, but also to formatively self-assess. Success for the application of knowledge can be partially tracked by identifying how many teachers attend workshops prepared to identify how they have applied the skills and knowledge.

Mentors can also play a significant role, not only in teaching/mentoring, but also in following up to ensure that self-assessment is taking place and being tracked. Incentives should also be built-in for mentors who have played an integral role in teacher self-assessment. Mentors should be familiar with the contents of the online modules, understanding that they should first direct participants to the online modules (to train participants in utilizing the online systems). They are only to provide technical assistance when it is either not presented in the modules, or if the teacher needs clarification or additional assistance following participation in the online training.

Strategies

Needs Assessment

One of the greatest obstacles faced by marketing education teachers today is the amount of time and effort required to complete their continuously increasing non-teaching workload (Acuff, 2009; Granahan, 2009; Martin, 2009). As a result, time management is a key factor in increasing both efficiency and employee morale. With their recent conversion to Microsoft Office 2007[®], teachers in this study had been complaining that the interface of the software has greatly inhibited their computing proficiency, and therefore has either led to increased time required to complete tasks, or the omission of completing some tasks (Martin, 2009). Enough of the teachers have commented on the conversion process that the city supervisor does not feel the need to perform a formal needs assessment. Training in Microsoft Office 2007[®] should increase productivity and morale for most of the marketing education teachers in this study. Marketing education teachers will be asked to immediately begin documenting how frequently they use Microsoft Office 2007[®], how much time they spend using it, what types of tasks they perform with it, and what types of tasks they would like to complete with the new version of the software, but are not able to do so.

The goals and objectives noted above follow a logical sequence, first identifying how to make it more convenient for teachers to voluntarily participate in the training. Because teachers now have Microsoft Office 2007[®] on their school computers, no additional installations should be necessary. Therefore, the only resources—aside from time—required for the training are a

qualified instructor, a qualified person to build the online modules for teacher reference, qualified and willing mentors, and a facility equipped with computers and Microsoft Office 2007[®]. A technical center in the heart of the school system's city provides the facility and software, and is somewhat centrally located for all of the marketing education teachers.

For the sake of this study, the focus is predominantly on goal 1, or workshop training. Separate instructional plans would be developed for the computer-based training, mentorship, and application thereof. Application is briefly addressed in the evaluation section below.

Training and Delivery Methods

The primary methods of instruction will be lecture, demonstrations, case studies, and group problem solving using the software. Each session will integrate lecture and demonstrations presenting new material regarding the software's capabilities and interface. Once the new material is introduced, learners will then be provided with a practical exercise to begin during the facilitated workshop period. For example, using MS Word or MS Publisher, teachers may be asked to produce a brochure that promotes their collaborative nature with the community, their training sponsors, or other stakeholders in the marketing education community. Teachers will begin the project during the workshop, working collaboratively with other teachers. They will then be required to complete the brochure prior to the next workshop. Teachers will be asked to provide samples of their work, as well as to identify how the training aided their productivity in generating the brochure, as well as other possible applications for the newfound skills and knowledge. Similar practical tasks would be introduced for each of the software components within Microsoft Office 2007[®], and subsequent workshops would always begin with idea and results sharing, identifying the practical nature of their projects and other related applications, and how other teachers may be able to utilize the same strategies. Teachers would also be trained in how to utilize the online reference modules, as well as how to work with mentors during the process. Collaborating with their colleagues, as practical, will be strongly encouraged.

Evaluation

Prior to training, teachers were required to keep a log of each time they used a Microsoft Office 2007[®] product, how much time they spent with it, etc. Following each workshop, teachers will be required to document each time they use the Microsoft Office 2007[®] product (or their inability to do so due to the new interface). More specifically, they will be asked to document how much time they have spent using the product, as well as whether or not they felt that the training benefitted them from a time and proficiency standpoint. One question asked of each log entry is whether or not participants found the training helpful, and also to estimate how much more time the task would have taken had they not taken part in the training. While these responses will only be estimates, they should be reasonably accurate, and teachers will be asked to identify a confidence measure to each estimate. Ultimately, this information will be critical in determining return on investment for the training.

At the conclusion of each workshop, as well as at the conclusion of all training sessions, teachers will be asked to evaluate the training with respect to Kirkpatrick's model (Kirkpatrick, 2004). The model will include questions pertaining to:

- Level One - Whether or not they liked the training
- Level Two - Whether or not they learned the knowledge and skills
- Level Three - How they applied what they learned on the job
- Level Four - What was the overall impact of the application (Piskurich, 2006; Bates, 2004).

The necessary data will have already been collected to complete a return on investment

calculation, as described below.

Evaluation

The professional development program will be implemented early during the school year. Teachers will receive training sessions once per month at the central technical center. Online delivery is an option, as well, but not utilized for the sake of this model. Each session of training will include new and practical concepts that can be immediately applied by teachers in preparation for classes and other administrative duties. Following each session, teachers will be asked to implement what they have learned to a specific part of their job. They will then be asked to report these applications and outcomes at the onset of each subsequent session. The intended result is for teachers to utilize the new software effectively and efficiently, thereby not only increasing productivity, but also morale and job satisfaction.

At the onset of the training, marketing education teachers will be provided with an action plan template. This template will provide them with the tools to record the information needed to develop a credible return on investment calculation. The action plan will include the steps or actions that were accomplished; their on-the-job improvements or accomplishments as a result of the training; how much of these improvements were linked to the training; a list of items that may have prevented participants from accomplishing specific action items; and their assessment of the time saved as a result of the training. Below is a listing of the various additional ways that data will be collected at all levels.

Level One – Reaction, Satisfaction, and Planned Actions

To complete a level one evaluation, teachers will be given a Likert scale questionnaire, and asked to assess their opinion of the specific training. Teachers will be given the questionnaire following each training session prior to departure. A cumulative questionnaire will also be administered following the final session in an attempt to collect composite data. The supervisor will collect the questionnaires and results tabulated. A satisfactory result is to receive a four out of five composite score per session. In addition, teachers will be asked to maintain an action plan, identifying how they have used the information. The action plan will include a limited amount of reflective level one questioning. These data, once compiled, may be utilized to determine whether or not the teachers were responsive to the training. A lack of learner satisfaction with the training can inhibit both learning and application (Phillips, 2003).

Level Two – Learning

Teachers will be asked to practice skills during the training sessions, and subsequently to apply and document those skills as they use them throughout the following month. They will also be asked to track any time they referred to the online training references, and/or the mentor or mentors assigned to that particular skill set. While these measures do include level three measurements, they also include level two. In addition, the facilitator will informally assess learning during the training workshops by observing teachers as they practice their skills. This will be an ongoing form of evaluation. In addition, sharing sessions at the onset of each workshop will provide evidence of level two learning. The determination of learning is critical, as a lack of internalizing the training content will inhibit teachers' abilities to apply the information to the workplace (Phillips, 2003).

Level Three – Application and Implementation

As noted above, teachers will be required to maintain a journal and an action plan log to

identify each time they used one of the skills learned in any of the previous workshops. This will help the training leader to determine whether the skills have been applied in a practical sense. In addition, at the onset of each session participants will be asked to report to the group of trainees how they have applied the skills over the past month. Therefore, in addition to the written action plan log, the facilitator will also receive verbal cues to determine whether the skills have been used. A 75% positive response rate for application of skills will be considered successful.

Level Four - Business Impact

Three elements will be investigated to determine whether the training has had an impact on the marketing education program. First, teachers will be asked if they found any of the skills to be applicable in new situations. In other words, did they discover any new uses for the skills resulting from the training? They will also be asked whether they were productive in ways that they had not previously been. Second, teachers will be asked to provide an estimate of how much time was saved as a result of the training. They will maintain this information in their action plan logs, and will add the cumulative amount of time saved. In addition, they will be asked to predict future time savings, and estimates will be determined for the school year. If time was saved, teachers will also be asked to determine how that time was used. Finally, teachers will be asked whether or not the increased productivity and efficiency has had an impact on their levels of morale and job satisfaction. This will also be discussed in a focus group setting following the completion of training. Additional information will also be collected and compiled from the composite questionnaire.

Level Five – Return on Investment

Return on investment is defined as the net monetary benefit of training. It is calculated by comparing programs costs to benefits, and expressed as a percentage (Phillips, 2003). The importance of measuring return on investment on training is to determine fiscal accountability, as well as to determine future allocations of funds. Ultimately stakeholders can determine a percentage of benefits for every dollar invested in professional development.

The conversion of data to monetary benefits will be both simplistic and conservative. The training coordinator (supervisor) will determine the cumulative amount of time saved based on teacher estimations from individual action plan logs, and then divide that number by the number of teachers. This will determine an “amount of time saved per teacher.” Also factored will be the teachers’ confidence levels of their estimation of the amount of time saved, and the most conservative estimates will be utilized. Additional information will be collected regarding job satisfaction, morale, and confidence, but will not be converted to monetary values.

Costs for the program will include design and development costs, teachers’ time, the training coordinator’s cost, delivery costs, the cost of the facility, and evaluation costs. All costs excepting the facility, and potentially the design and development costs, will be based on salaries and benefits of the individuals in each role. The salaries and benefits for each are then prorated for time spent on the various functions noted above. Once this information is compiled, the formula used will be a benefits/costs ratio ($BCR = \text{program benefits} / \text{program costs}$). Benefits will be determined by calculating the amount of time saved per teacher and prorating it with their salaries and benefits. Costs will be determined by the method noted above. The benefits/costs can then be converted to a percentage amount by calculating a return on investment ($ROI = [\text{net program benefits} / \text{program costs}] \times 100$). While increasing profits are not an objective in public education, a determination of the true costs and benefits of professional development are critical. Such a calculation will determine the financial benefits or return for every dollar invested in the program. Job satisfaction, morale, and confidence will be reported, but not be converted to monetary terms.

Data Analysis

Quantitative Data

Education is not a revenue generating industry, and training is generally funded from a “pool of money” whereby the supervisor or other administrator must determine its best use. While a quantitative return on investment may not necessarily be the only factor involved in decision-making, it may go a long way in helping to determine the fiscal value of the training, and subsequently whether such training is justified and should be continued. A rationalization for training to higher-level administrators is imperative, and fiscal responsibility is a mandate for supervisors and other administrators.

Qualitative Data

For the supervisor, non-monetary qualitative data may prove to be much more useful, as job satisfaction, morale, and confidence are critical elements of a strong program. Aggregate results necessarily need to be shared with the participants so that they understand the value of such training, leading to good attitudes toward future professional development. In addition, qualitative results should be shared with higher level administrators, and relationships should be examined between this data and teacher turnover.

Summary

Although public education is not a revenue generating industry, fiscal responsibility is paramount. Determining the true financial value of professional development may not be the only consideration in its development and delivery, but it is a critical factor. Using a return on investment process can help public school administrators not only justify related expenditures, but also to prove how professional development can increase job satisfaction, morale, and confidence levels.

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