AN EVALUATION OF SAS TRAINING MEDIUMS
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ABSTRACT
In a fast-paced technological industry, managers are constantly forced to seek computer training courses for employees and end-users. Traditionally, employers wonder what training courses their employees should attend. But with more training mediums emerging, managers are faced with a new question, which training mediums will best serve the general needs of the company. A true measurement scale for determining the SAS training medium(s) best suited for your needs currently is not available. This paper discusses the importance of evaluating and weighing the alternatives and offers helpful suggestions for selecting appropriate training mediums.

INTRODUCTION
Today's Data Processing managers are not only concerned with adequate SAS training for employees, but with the acquisition of the most effective training medium(s) from a host of available alternatives. This paper presents SAS training concerns as they relate to the organization, available training mediums and alternatives, as well as a descriptive evaluation of important features in the selection of viable SAS training mediums.

COST JUSTIFICATION
Prior to the acquisition or development of SAS training, the training coordinator must become educated in cost justification techniques. The coordinator's understanding of these techniques would include knowing which method to use under different circumstances and the ability to apply the appropriate method(s) to the situation at hand. Various cost justification techniques would include "cost-benefit" and "cost-effectiveness" analyses. "Cost-benefit" analysis evaluates between alternatives and derives an objective where all costs associated with the value of the derived objective are stated in objective or quantitative measurements. Examples include teaching and development costs, overhead, and student salaries. "Cost-effectiveness" analysis evaluates between alternatives to derive an objective where all costs associated with the value of the derived objective are stated in objective and subjective or qualitative measurements. Generally, it is best to use "cost-effectiveness" analysis when justifying costs associated with training.

In addition to educating the training coordinator in cost justification techniques, a critical element must exist for SAS training, or for that matter, any training to be successful. This element is the education of management. Some investment in time should be made in this necessary area. Management needs to understand why one or more SAS training mediums are being acquired. This is mandatory to the ultimate success of the training endeavor, since several misconceptions exist about training in general. Prevalent among many managers is the belief that training that costs the least offers the most in effectiveness. This could not be farther from the truth, especially since many variables interplay with the objective of effective training. There are several important variables related to training effectiveness, but three deserve special discussion, duration of the training, ability to put to use what is being taught, and reinforcement of training through review.

Duration of training has the effect of either "exposing" students to the subject or "teaching" them the subject. Generally speaking, awareness of a subject area results from shorter durations compared to in-depth understanding and knowledge from longer durations of training. Secondly, the ability to put to use the material being taught as soon as possible. This enables the student to experiment and "learn by doing" the fundamentals of the training, resulting in greater interaction and response from students. The third variable related to training effectiveness is the reinforcement of training through review. This entails periodic review sessions, round-table discussions, and testing learned material. Greater understanding and retention results as the student demonstrates diversity in application development. Thus, the student will become more productive when returned to the job site.

TRAINING ENVIRONMENTS
Listed below are six training environments where SAS training can be obtained: 
- Colleges
- Societies
- SUGI
- SAS Training
- Third Party
- Company Developed.
Discussions will be presented on two of the preceding environments, namely, SAS Training and Third Party where the first includes Video and stand-up lecture while the last includes Video, Computer Assisted Instruction / Computer Based Training (CAI/CBT), and stand-up lecture.

TRAINING MEDIUMS

The SAS Video Training Courses Library offers modular training for end-users and programmers. They can be tailored to meet specific company needs. To use the SAS Video Training Library, all that is needed is a cassette player and a television monitor.

CAI/CBT provides instruction to its users through interaction with the computer. CAI/CBT is an inherently active mode of learning. The user must continually do something - answer a question, select a topic, ask for a review, and so on. By using computers to an already existing curriculum or media, it is possible to turn passive learning into active learning.

The lecture courses are offered through the SAS Institute as well as Third Party Vendors.

TRAINING MEDIUMS EVALUATION

Each of the preceding training mediums are displayed within a host of categories in Chart 1. As an aid in evaluating which training medium(s) are best suited for your company, there is scaling feature built into the chart. This scaling feature is qualitative or subjective and is based on discussions and/or evaluations of students taking the various training courses. The ratings and their meanings follow.

- Low - below the average level;
- Medium - falling in the middle (average) level;
- High - above the average level.

After examination, you may find that one training medium has everything you will need, or you may find that two or more mediums seem to meet your company's objectives. Note: You will find that Chart 1 will be most beneficial when you associate objectives and requirements with the ratings outlined on the chart.

CONCLUSION

It is hoped that these guidelines will help you select the best training medium(s) based on your company's needs. After much evaluation and study, we recommend a mix of two or more SAS training mediums. In this way, your organization could tailor your training mediums around the needs of the user population. CAI/CBT offers in our estimation, a very desirable method of training since consistency and standardized format are built into the products. The user is oriented from the start to the system as well as terminals. The greatest disadvantage with CAI/CBT technology is that some users become frustrated when program errors and/or inconsistent question/answers occur. By using two or more training mediums together, an organization can pull the essential parts from each and create a company developed SAS training course.

REFERENCES

1 1980 DATAPRO Research Corporation, Delran, NJ 08075 USA.

2 Thiel, Carol Tomme; "DP Training Education With Purpose", INFOSYSTEMS Pay, 1983.
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<td>Medium - High</td>
<td>Medium - High</td>
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<tr>
<td>COST OF TRAINING</td>
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<td>Medium - High</td>
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Chart 1.