Why SAS* Training?
The simplest answer to that question is... "So you don't have to be the sole SAS programmer for your entire company, their families, friends, and neighboring cities!!!

It's nice to be the resident SAS software expert in your company. I know, there is a good feeling of power when everyone comes to you for SAS* software help. But why not assist the end user community to do some of their own programming. Let them use SAS software to get exactly what they want. Let them customize a report, or massage some data. Believe me, those end users will still call you for help. I am sure that as soon as they want some help, or some kind of report - within seconds your phone is ringing.

So we begin to see...

The Importance of Training.
It is important to train your end users. This will allow them to become creative and get the most out of the SAS software, or any product. Getting the most out of the SAS software could mean knowing how to use PROC MEANS or PROC FREQ, to get informative statistics about some sample of data. It could also mean having the understanding of how to use PROC REG or PROC GLM for solving forecasting and regression problems.

With proper fundamental training, and a little direction on the way, your end users should be able to become more advanced SAS programmers, on their own. (Well, maybe a lot of direction.) You'll know how much training is needed to save yourself from becoming the one and only SAS programmer in your company.

Where To Start?
First, it is important to know your audience. Second, it is important to know your audience. Third, it is important to know your audience. If you were a plumber, SAS training would not mean very much to you. So it is important to know the level of programming experience of those that will be trained. Sometimes you may have users that are new to computer programming (apprentice plumbers). This opens a new can of worms, and questions to be answered:

* Do they need a LOGON ID?

* Do you have to show them that complicated logon sequence... TSO user-id / password.

* Have they ever sat in front of a terminal before?

* How do you adjust the brightness? LOWER and UPPER

Wait gets better...

What if you are using PC's with communications software to emulate a terminal? Maybe you need to have a training session about PC's... and communications software... and modems... ugh!

If some, or all of the above conditions exist, I recommend that an "Intro to Data Processing" class be designed, taking into account your company's computer environment. It should explicitly explain about the type of terminals and/or PC's that they will be using. An "Intro to DP" class should show how to logon, and more importantly, how to logoff! For PC terminal emulation, you need to provide detailed instructions on how to use a modem and communications software. You may need to explain how IRMA and FORTE cards work. Another important item that demands some time is keyboard differences between an IBM terminal and a PC. For example, where are the PF(program function) keys located, let alone what they do.

I have evaluated some outside "Intro to DP" type courses, and I feel that they are usually overkill for what you really need to accomplish. You could probably design a better, custom tailored class, taking into consideration the following items:

* Operating system and working environment...
  * (TSO / BATCH / CMS)

* Hardware (terminals, PC's, printers)

* Logon process

* Editor (SPF / XEDIT)

In using an editor, you only need to discuss necessary items like coding and saving SAS programs, etc.

Ok, getting back to knowing your audience. You may have some users that have programmed before, but don't know how to use the SAS system to its fullest potential. If so, then we can get right into finding SAS training to suite your company's needs and sanity. The reason why I speak about sanity, is because if you are the person to recommend in-house or out-of-house training, chances are that you will be responsible for either maintaining the software, or setting up the class particulars.

Keep in mind, all of the above observations should be
made before deciding what level - or levels - of SAS training is necessary. You may find that you need to train many levels of users.

Types of Training Available
There are many roads to take here. But by no means do you have to stick with only one method. Your situation may warrant a combination of methods to provide a healthy variety of SAS training. Let's discuss 5 types of training.

CBT (Computer Based Training)
You may have heard about CBT. This type of training allows the user sit at a terminal and interact by reading text on the screen, and then answering questions that appear. This involves purchasing the CBT either to run on a MAINFRAME or on a PC.

Advantages
- Can take the course at any time
- Allows the user to go at his own pace
- Usually can stop at any time and then resume later
- Good terminal interaction
- Usually contains a wealth of information
- Usually keeps track of all students
- Companies that provide CBT will provide support in case of problems
- You can get a trial period for evaluation purposes
- Allows the user to skip or repeat segments

Disadvantages
- Only one user at a time (PC versions)
- If many users are interested in taking the course, someone must coordinate a schedule for availability of equipment
- Can't ask specific questions
- Sometimes too much information
- Sometimes information doesn't apply to your company
- Must know how to logon and operate a terminal
- PC version - only one workstation available to take the class
- MAINFRAME version - must have a presentation system installed (Phonex, IIS, etc).
- You should evaluate the entire course, which means sitting through an entire course before deciding if it is good

- Some vendors of CBT are: CRWTH, MVC, and SAS Institute.
- SAS CBT does not need a presentation system because PROC DISPLAY is now a part of the base SAS software

Video-Based Training
SAS Institute does have about 10 video courses that can be site licensed and 4 Video Tutorials that can be purchased. With Video training you get: a set of tapes in a specified format, coordinators guide, student workbook, and computer tapes containing sample programs and data.

Advantages
- Can take the course at any time
- Go at your own pace
- Can skip or repeat segments
- SAS Video Training does have hands on workshops

Disadvantages
- Can't ask specific questions, but you know who will get asked those questions
- Though you can teach as many students as you want, the product is licensed so that the first year cost is about $2000 with yearly renewal fees of about $1000
- Course is not tailored to your company and may contain information not relevant to your situation

By the way, SAS Institute does have 4 one time charge Video Tutorials: PC SAS for Experienced Users, Using SAS Macro, Version 6 SAS/GRAPH® Software in the PC Environment and Version 6 Enhancements. They cost $495 each. I like these because they are low priced and excellent subject matters. They are 4 useful topics.

Instructor Based Training
One of the better ways to learn SAS software. SAS Institute has quite a few training courses to offer. They are given frequently all over the country. There are lecture only classes and lectures with workshops. Lecture only classes are given at many hotel type locations throughout the country. In New York, they are given at the Sheraton Centre, or the Roosevelt Hotel. Courses given at training centers usually have the workshops.

The SAS Training Centers are: Austin, TX; Lombard, IL; Rockville, MD; Toronto, Canada; Cary, NC; and Los Angeles, CA. There are plans to put a training center in New York.
At last count, there were approximately 70 SAS training courses. This is a lot of courses to choose from. By the way, if you can justify it, and you can provide enough students, and the SAS training schedule does not lend itself to your needs, SAS Institute will send an instructor to your site.

Advantages

- Can ask the instructor any question (pertaining to SAS software)
- Can ask company specific questions (operating system type)
- Good place - besides SUGI - to meet other SAS users
- Knowledgeable instructors
- One of the better training solutions
- No preparation by your company
- Provides the manuals and usually a continental breakfast and lunch

Disadvantages (not many)

- Governed by the schedule
- Sometimes travel is involved
- Not many disadvantages

There are many outside vendors that provide instructor based training. MVC is one of them. Some consultants also have their own SAS training courses to teach.

Designing Your Own Training

Designing your own training course is a very good idea. This way you can teach SAS software exactly how it is used at your company. The problem here is that this is definitely a time consuming task to take on. But, the end result is a custom tailored course designed specifically for your company’s environment and style.

So, SAS Institute met us half way.

SAS Trainers Kits

Ah, I like this type of training the best. The SAS Trainers Kit product requires your company to provide the instructor (I wonder who). SAS Institute will train the designated instructor for 3 days in a trainers class. This trainers class covers the material in the course, and shows how to present this course effectively. Then SAS Institute will send to you - in a very nice carrying case - pens, markers, blank slides, a pointer, a pad, and the overhead transparencies for the course. Also, 20 copies of the SAS Views* for course, 20 copies of the SAS Introductory Guide, and a computer tape with sample programs and data for the hands-on workshops. Along with that you get a 3 day schedule, handouts of programs, data, and sample exercises. You can also reorder more SAS Views books at a 25% discount.

Advantages

- Make up your own schedule
- Teach as many students as the instructor can handle
- Teach a SAS Institute course, but tailor the lectures to your company’s style
- Can use specific company examples to reinforce points made in a chapter
- Teach at your own pace
- Students can ask company specific questions, of which the instructor should be prepared to answer
- Workshops
- Workshops include logging on to your company’s system
- Students are in a classroom at your company. Hopefully that is a more comfortable feeling, than at some hotel. After teaching the course a couple of times, you will be able to see where strengths and weaknesses occur. You will notice trends, based on these observations you will be able to make modifications.
- The result is a custom course design exactly the way you want to teach, with the help of SAS Institute

Disadvantages

- You must maintain a schedule
- You must keep track of your students
- You need an overhead projector and a classroom

Personal Observations

I have been to SAS training classes. They are always pretty good. The instructors are knowledgeable and the lunches are good. The SAS Views books are useful after the class is over. I frequently refer back to notes I have made in the book, for specific topics. It is a good place to meet other SAS software users to discuss how the SAS software is used in different companies.

I have been to courses at SAS Institute. The lecture/workshop classes are very educational, like all hands-on training.

I have never taken a SAS video course, but have taken other video type courses. In general, they are economi-
cal, and convenient. In a class of many students, group discussions would always arise to further discuss a topic.

I have evaluated CBT products before. I have looked at 2 intro to SAS courses, by outside vendors. I did not like them. They seemed to have too much information. They did not hold my attention, I quickly got bored. I did, however, like an SPF computer-based training course by MVC. The company I worked for, purchased the course, and I coordinated the students and equipment schedules. Student feedback was very favorable.

I have been teaching the SAS Training kit “SAS Programming For New Computer Users”. I like teaching this course. All of the information is there. The workshops are good. The materials are excellent. I have customized the course somewhat. I skip chapters that don’t apply. Replace some of their slides with my own. In general, my lectures are geared more toward the Merrill Lynch environment. The course is very introductory. I have been given the “OK” to purchase the “SAS Trainers kit Basics Class”. This is the next level of SAS training. Most of the feedback sheets I get back from my students say that a “Basics Course” would be a good idea as a follow up course.

Conclusion
If you can tell by what I have been said, I am an advocate of the SAS Trainers Kit products. If you could spare a trainer, the cost, and have a training room, this type of training is beneficial to your SAS users.

As far as techniques go, here are a few that I use...

- Make sure you have the proper handouts
- I like to set up the room the day before. This is to make sure there are no surprises.
- Make sure that the overhead projector works
- If you are using a white board, make sure that the markers are not dried up
- If you have hands-on workshops, do them before your students do them and find errors
- If you can, customize the class. It will make for a more interesting class and will be easier to relate to.
- Most important, give out feedback sheets. Student feedback is the only thing that you have to gauge how well you are accomplishing your task of educating other end users in your company.
- Make sure all of the students know who you are, and how to get in touch with you if they have a problem.

Above all... Keep the class interesting!!! You students will remember more of the material.

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