Abstract

Clemson University is a large state-supported school located in northwestern South Carolina. Administrative personnel at Clemson are increasingly in need of up-to-date information in order to manage their resources, but the administrative programming group is already overburdened with requests for computer-generated reports. As a result, colleges and departments must wait months or even years for the reports they need.

Beginning in the spring of 1981, the Clemson University Computer Center began to offer a series of computing workshops tailored to administrators. These workshops taught general concepts of computing, the use of time-sharing terminals, and SAS. Because of these workshops, a number of administrative staff members became familiar users of the computer, able to generate their own personalized reports using SAS.

This paper will describe the problems encountered by administrators before the workshops became available, the methods used to organize and publicize the workshops, the outline of material covered in the workshops and how the material was presented, the reasons for choosing SAS as the language to be taught and the successes and failures of the workshops already completed.

Background

Clemson University is a large state-supported school located in northwestern South Carolina. Clemson has over 11,000 students, 9 academic colleges, and a graduate school, and therefore requires a large supporting base of administrative personnel. Because of the recent state of the economy, Clemson’s administrators have had to tighten their budgets at the university, college, and departmental levels. In order to administrate their areas with limited budgets, Clemson administrative staff have turned more and more to computer-generated reports.

As a result of the high demand by University administrators for information, serious problems have developed. To better understand why these problems have come about, it is necessary to understand the makeup of computing services at Clemson University. At Clemson, three departments are responsible for providing computing services. One of these, the Division of Information Systems Development (DISD), is responsible for developing and maintaining information systems for contract users external to the University; therefore, the activities of DISD have no bearing on the problems faced by University administrators. The other two departments are the Division of Administrative Programming Services (DAPS) and the Computer Center. It is the primary responsibility of DAPS to develop and maintain administrative data processing systems for Clemson University. The Computer Center manages Clemson's DP hardware and software for the benefit of DISD, DAPS, their users, and the faculty, staff, and students of Clemson University.

Not surprisingly, the staff of DAPS is seriously backlogged with work. Administrative users are currently waiting months and frequently years for data processing systems to be designed and implemented. Even simple requests for computer-generated reports are requiring months to be processed, such reports often having a low priority among needed computer programs. As a result, many administrative users are frustrated by the long waits, and the DAPS staff is overworked.

Recent History

Less than two years ago, several administrators decided to explore alternatives to the services offered by DAPS. Among these “pioneers” in the area of homemade data processing were the staff of the Publications and Graphics department. Several individuals of that department held consultations with the Academic Computing Support group within the Computer Center, as they wished to design and implement a data processing system to track their production work and to determine the amount of time spent by each employee on each production job. The language chosen for this data processing system was SAS. The system was designed and implemented within a few short months by two Publications and Graphics staff members, who at first knew very little about computing. The system continues to be used, even though the original designers have left Clemson University.

At about the same time as the Publications group began to learn and use SAS, an administrator from the Physical Plant department began to explore the possibilities of using SAS to aid him in managing the vast amount of data being collected regarding construction and maintenance work being done at Clemson. Early in 1979 the Physical Plant began to use a system designed by DAPS; however, the Physical Plant administrator saw SAS as a way to expand upon the use of the data generated by the DAPS system.

The Spring Workshop Series

A snowball effect occurred, as more and more departments began to consult with the Academic Computing Support group (who had the technical expertise with SAS). ACS, in conjunction with the Computer Center’s Administration and with DAPS, arranged for the teaching of a
series of workshops, beginning with an intro-
duction to computing, followed by hands-on
experience with computer terminals, and ending
with a grounding in the fundamentals of SAS.
It was originally intended that the size of these
workshops be limited to 24 participants; how-
ever, over 60 individuals attended the first
workshop series, which took place in the spring
of 1981.

Nearly every academic college was represented.
The original workshop series lasted nine weeks,
meeting for one hour a week. The presenta-
tions included videotapes, slide shows, and lec-
tures. Not all of the participants attended for
the entire nine weeks; however, approximately
40 individuals remained for the duration of the
series. The critical element in the presenta-
tions was that technical jargon was kept to a
minimum. A meeting was held following the
workshop series to allow the participants to
voice their opinions regarding the presenta-
tions. The administrators seemed pleased with
having acquired SAS as a tool; in fact, their
major criticism was that they would have liked
additional hands-on experience with the com-
puter terminals.

The Fall Workshop Series

The workshop series was repeated in the fall of
1981. This time, the series was advertised as
an attempt to conquer "computerphobia." As a
result of the advertising, both in the faculty/staff newsletter and by word-of-mouth,
over 60 faculty and staff signed up for the fall
series. A large number of faculty were part of
the fall workshop group; some of these had
both administrative and teaching responsibili-
ties.

The fall workshop differed little from that given
the previous spring. An additional week of
computer terminal use lengthened the timespan
to ten weeks, and the SAS presentations con-
centrated more heavily on fundamentals and
simple applications. Primary emphasis was
placed on the uses of the DATA step, PROC
SORT, and PROC PRINT. Again, as the work-
shop series went into its final weeks, the num-
ber of participants dwindled, but the total
number never fell below 30.

Beyond the Workshops

While the spring and fall workshops were being
held, some administrative departments began to
follow the lead of the Physical Plant and the
Publications group. The Purchasing department
experimented by hiring a student to write SAS
applications; however, this method seemed to
give poor results, since the student eventually
quit the job and none of the full-time Purchas-
ing employees had yet learned SAS. Meanwhile,
SAS/GRAPH entered the picture for another
department. An employee of the University's
Business Office, who had previously used SAS
to process a survey of alumni, was asked to
prepare maps and charts for a presentation to
be given by Clemson's president. The Business

Office employee, with the assistance of the
Computer Center staff, used SAS/GRAPH and a
Servogor plotter to prepare the required mater-
ials.

A meeting was held during the fall of 1981 in
which the administrative staff of the Publica-
tions and Graphics department, the Physical
Plant, the Purchasing department, the Business
Office, and several other departments swapped
success stories. They seemed excited by the
possibilities afforded them by SAS and SAS/GRAPH. As a result of this meeting, a

group of about six of the attendees, under the
direction of a DAPS staff member, began to
hold weekly gatherings at the Computer Center,
the purpose of which was to enable them to
work on applications in their own areas.

Computer Center staff also aided in the direc-
tion of this small group.

Conclusion

This brings us to the present. The two impor-
tant questions are "What has really been accom-
plished?" and "What next?!" To answer the
first, I would like to say that within a period
of a year a SAS users' community has developed
among the administrative staff of Clemson Uni-
versity. One of the things which the Computer
Center and DAPS wished to accomplish was to
courage these departments to look to each
other for technical support (except in the most
complex cases), and this is beginning to occur.

The second question, regarding the future,
requires a more thorough answer. It seems
likely that the Computer Center will continue to
offer the beginning workshop series every
semester, and that these workshops will be well
attended. However, there is a physical limiting
factor in that not every department on campus
has access to a computer terminal. This prob-
lem may be partially relieved in the future, as
many of these departments are acquiring word-
processing equipment with communications capa-
bilities.

The small special-interest groups are likely to
proliferate, with some concentrating on using
SAS for statistical analysis, some using
SAS/GRAPH, and some simply using SAS to
produce reports. If the situation at Clemson
moves in the direction of the Information Center
concept, as described by James Martin in his
most recent book, Application Development With-
out Programmers, I foresee SAS and
SAS/GRAPH becoming the core of a collection of
software tools available to the administrative
user community. The workload of DAPS will
begin to shift toward data base design and
away from report generation. DAPS program-
ners themselves are beginning to use SAS to
prepare some of the reports requested by their
users.

It will be important for the Computer Center
and DAPS to work closely together; otherwise,
DAPS management may mistakenly perceive SAS
as a "weapon" used by the Computer Center to
"steal" their users. It has been exciting to watch SAS move beyond its traditional statistical analysis role at Clemson; it is my hope that a large administrative user base develops quickly.

Reference