

The Process and Development of the SAS/STAT® Programmer Role from a Retroactive Perspective

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SUMMARY

The aim of this paper is to give a representational guide to the recruitment and training process for graduates at PRA Health Sciences and how the model used increases the speed and efficiency of the next generation of SAS/STAT® programmers. The purpose of this model is to develop SAS programmers who have a consistent approach to programming, thus increasing quality and efficiency. The way in which this is achieved is outlined in three major steps; the recruiting strategy, the Academy (an initial six weeks of training) and the mentoring process. This paper will focus on these steps and how programmers new to the industry benefit from the training process from the perspective of a junior programmer.

The recruitment strategy; one of the challenges facing the pharmaceutical industry is the recruitment of qualified individuals into SAS programming. There can be many reasons that contribute to this; such as the growth of the sector, the competitiveness of the industry, the need for specialized skill sets and the level of training required. The solution adopted at PRA was to hire smart, enthusiastic candidates that have a background in mathematics and/or statistical analysis. These candidates were targeted either by a referral system or from an external campaign through other sectors, such as higher education. Once a candidate has been selected, a telephone screening call is used to assess the candidates' suitability for a formal interview and aptitude test. With a six week training course planned, the candidates are carefully selected to ensure suitability within the role. Along with the quality of the candidates chosen, the number of candidates is equally important. A class room style learning environment requires a class. To this end, strategic time points in the year are targeted to attract potential programmers. Either post graduates, straight out of university, or people that may have had experience in other industries or fields are brought together as a diverse group.

The training Academy; the PRA training Academy was established in 2008 and consists of a comprehensive on-the-job training syllabus to mold the next generation of SAS programmers. The Academy is taught in a class room style environment and assumes no prior SAS programming experience. Training includes interactive presentations, self-reading and Q&A sessions. This then progresses to using the practical working environment, training studies and live follow-along demonstrations that help develop programming ability. SAS Base certification preparation is also part of the training regime. The course is designed to highlight the most important basic areas of the role of a SAS programmer within the pharmaceutical industry. This ranges from basic concepts of SAS, the programming of tables, figures and listings and dataset programming with relation to CDISC standards and Pinnacle 21 compliance. Future preparation for billable work is also touched upon, culminating in a well-rounded introduction to the pharmaceutical industry. That introduction allows for a sheltered, controlled and safe place in which to ask questions and learn. It offers the company the ideal location to introduce the new employees not only to the basic tools that they will be using, but also to the grander scheme of the business and how they contribute to its success. Over the six week course the student receives all of the basic building blocks required to become a functional and competent SAS programmer. This model has consistently proven to produce programmers that adhere to the good programming practices and therefore produce high quality code, which should be accurate, concise and easy to follow. These essential skills, the corner stone of any good programmer, are taught as gospel in the training Academy leading to a faster and more effective road to drug approval.

Continued mentoring and support; with any affective training, comes support. The support structure at PRA Health Sciences has been designed to be regimented but also relaxed. Towards the end of the Academy students are shown how to access help within the office. This can vary from internet searching to asking co-workers or reading support documents/ the SAS Certification Prep Guide. All avenues can be explored in one's own time, in a relaxed way. A regimen of scheduled meetings is also introduced to help develop, nurture and encourage the junior programmer. Hour long weekly line manager meetings are used to discuss what the programmer is working on, code structure and efficiency and adherence to good programming practice. Over the course of a year these meetings are reduced in frequency and length, as the programmer becomes more confident in their ability and requires less hands-on tutorage. As these meetings start to decrease, another type of guidance is introduced in the form of code review. In this bi-weekly discussion, programmers bring useful snippets of code to a group meeting. This encourages active communication with their peers as well as learning new and more creative ways of programming. Active engagement with fellow programmers creates a unity within the office, along with preparing them for future communications and presentations.

This paper will look into each of these key areas and build upon them in more detail, as well as adding the personal opinions of a junior programmer that has successfully completed this training program.