

So You Want to be a Successful Statistical Programmer?: The Importance of People Skills

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ABSTRACT

Technical programming skills are a must for a statistical programmer! However, I will demonstrate, in this paper, that people skills are at least equally important as technical skills for a successful statistical programmer. The days of simply sitting in a cubicle and programming are fading. Even statistical programmers who work remotely need people skills. In this rapidly changing world of varied communications methods, people skills are an integral part of the success of a statistical programmer. I will challenge the notion that you are born with people skills. Moreover, I will show how people skills can be developed. The savvy statistical programmer would indeed be wise to pay attention to developing their people skills in order to ensure a successful career.

INTRODUCTION

I graduated in the early 1980's with an MSPH in epidemiology. I then began my career as a statistical programmer by working at several medical schools doing epidemiologic research, such as case-control studies, cohort studies and clinical trials. In the mid-1990's, I switched from working in medical school to working for a biotechnology company as a statistical programmer. In the mid-2000's, I moved into managing statistical programmers. After being a manager for many years, I worked as a consultant. I retired last year (2021). People skills were definitely important to my development as a statistical programmer.

PEOPLE SKILLS FOR STATISTICAL PROGRAMMERS

People skills (also referred to as soft skills) are personality characteristics which a person uses to communicate and interact with other people. People skills are involved in normal communication, conflict resolution, negotiation, problem solving and other interpersonal interactions.

One may think of a person with good people skills as possessing good EQ (Emotional Intelligence Quotient). Most of us are familiar with IQ which measures one's cognitive skills. While there is not a standardized test for EQ that I am aware of, there is a DISC test which measures behaviors at work (DISC 2022). The letters DISC stands for Dominance, Influence, Steadiness and Conscientiousness. Understanding how you and your co-workers behave would be important in understanding interpersonal relationships in the workplace.

Understanding your personality type and the personality type of your co-workers may aid in developing your people skills. The Myers-Briggs Type Indicator (MBTI) is a standard personality test. Interestingly, people who have a MBTI profile of INTJ (Introvert, iNtuition, Thinking and Judging) are suited to a career in science, statistics and data analytics (INTJ Careers 2022). INTJs tend to be driven to work hard and solve interesting programming problems.

Previously, I have pointed out that statistical programmers are empowered when they are a stakeholder in meeting deadlines (Smoak 2008). To be a stakeholder in a process, one must possess good technical and good people skills (the ability to work with people).

Certainly, technical skills are primary to the successful programmer. Technical training can be acquired in many ways, through on-the-job training, taking classes and learning from other programmers. However, I suggest that programming skills alone are not enough to be a successful statistical programmer. People skills are necessary for statistical programmers to be able to interact and negotiate with biostatisticians, data managers, database programmers, clinical research associates, regulatory personnel, medical writers and other personnel involved in the conduct of a clinical trial (Smoak 2006).

Here are some real-life examples of work done by statistical programmers which required both technical and people skills:

WORKING ON A PROJECT (ON-SITE) WITH SHORTENED TIMELINES:

Suppose that you are the primary statistical programmer on a project and your manager comes to you and says that we now have 5 less days to complete a project on-time. You have two other statistical programmers working with you on this project.

Suppose further that the primary statistical programmer has been taking their time to tweak one particular program because it could be programmed very efficiently with an elegant macro. However, working on this macro for this one program is very time consuming. Now that timelines are shortened, the primary programmer may need to give up working on the interesting macro to get the work completed more quickly.

In this instance, both technical and people skills would help to meet the shortened timeline. The primary programmer would need to use their technical skills to program efficiently and quickly. Good people skills would also be needed to communicate effectively with the manager and the two other statistical programmers. Without good people skills, there would be the opportunity for conflict between all of the workers. Conflict in these types of pressure situations is inevitable. The effects of the conflicts will be lessened if everyone communicates well their needs and that their needs are understood by the other people involved. In other words, good people skills are necessary for resolving conflict.

WORKING REMOTELY AND NEEDING CLARIFICATION ON SPECIFICATIONS:

Suppose that you (a statistical programmer) are working remotely on a project. The statistician sends you programming specifications via e-mail. You review the specifications and ask questions via e-mail. However, after several e-mail exchanges, it is becoming clear to you that the statistician is not understanding your questions via e-mail and that it is taking a lot of time to resolve your questions.

In this situation, setting up teleconferences may be necessary so that you can interact directly and resolve questions more quickly. In this case, the people skills are necessary to take the initiative to resolve this situation. Just sitting at home and using your technical programming skills is not sufficient to resolve the situation.

CLERALLY COMMUNICATING YOUR CAREER DEVELOPMENT GOALS

Suppose that you are a programmer and other programmers come to you with questions because of your expertise (technical skills). You realize that you could be a manager. What do you do?

Talk with your manager and let him/her know that you are interested in learning how to be a manager. Ask your manager to give you a task to demonstrate that you have the ability to manage people and/or projects. Communicating your desire to be a manager is key here. You may never get the opportunity if you do not speak up about career development. You may not want to be a manager, but whatever you want in terms of career development needs to be clearly communicated.

DISCUSSION

These three examples demonstrate that both technical and people skills are necessary for a statistical programmer to be successful. In the first example, the primary programmer needs good people skills to communicate with his manager and with the two other programmers working on the project. In situations where timelines are suddenly shortened there is the potential for conflict and good people skills can help to defuse conflict. In the second situation, the programmer working remotely needs to talk directly with the statistician since e-mail is not being effective. In the third situation the programmer needs to take responsibility for clearly communicating his/her career development goals to their manager. It is interesting to note that in the first two situations, the statistical programmer cannot make progress in programming (using their technical skills) until a problem is resolved using their people skills. Thus, they really cannot do their job without people skills.

A statistical programmer will not get hired without good technical skills, but good people skills are necessary for keeping one's job. When I worked as a manager, I saw statistical programmers with great technical skills and poor people skills bounce from job to job because of their poor people skills.

People skills can be learned just like technical skills can be learned. Being an introvert is not a valid excuse for not having good people skills. What distinguishes an introvert from an extrovert is how they process information. Introverts process information by thinking about the information before responding, i.e., they think internally. On the other hand, an extrovert processes information verbally, i.e., they think by interacting with people. As an introvert, I have learned to develop my people skills. One way that I have learned people skills is by doing presentations at conferences. Certainly, doing presentations is not the only way to learn people skills, but it is one good way for one to develop interpersonal skills. There are courses/seminars which one could take to learn people skills.

To me, what it really takes to develop people skills is being intentional in focusing on others and treating them like you would like to be treated. A big part of this is learning to listen to a person. There is a technique called active listening in which you respond to a person and try to repeat what you think they are saying. This is a good technique to use in clarifying with another person what they are trying to communicate. On the other hand, when you want to clarify with someone else what you want to communicate to them then you need to prepare your thoughts and organize them. You may want to take into account to whom you are speaking to, i.e., how you present your thoughts may depend upon the type of person you are speaking to (remember DISC and MBTI). Yes, it may be uncomfortable to develop good people skills for an introvert, but with practice it becomes easier and more natural.

In this paper, I have used myself as an example of the need for people skills for a statistical programmer. I have also used myself as an example of how I personally developed people skills. My experience is certainly not the only way to develop people skills. The point of this paper is to encourage you to take into account the need to develop people skills. How you personally decide to develop people skills may be different than my experience. But it is my recommend that if you are considering a career as a statistical programmer, you would do well to pay attention to developing your people skills as well as your technical skills.

CONCLUSION

Statistical programmers who have good technical skills and good people skills will be more successful in today's market than those who just have good technical skills. Understanding your personality type and the personality type of your co-workers can assist the statistical programmer in developing their people skills. In a fast-paced work environment, the statistical programmer often has little time to produce analysis files, tables, listings, and figures. The statistical programmer will need to use both their technical and people skills to get the work done. Both the technical and people skills are necessary for a successful career.

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