

SP08 Feedback to Feed Back

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ABSTRACT

Over the last decade, the pharmaceutical industry landscape and analysis needs have changed dramatically. Emerging technologies, global diverse stakeholders, new data types and maintaining FAIR principles are just a few reasons for those in pharmaceutical data science roles to prioritize both technical and behavioral skills. For those in people leadership, feedback can be a powerful tool to help guide our teams to perform at the highest level that may be leveraging their strengths or upskill any weaknesses. Additionally leaders need to let the employees themselves look for areas for improvement and have them formulate a plan to move it forward that we can support and give them the floor to drive. In this presentation, we will be looking at some of the bigger changes over the last decade for data scientists in the pharmaceutical industry along with the skills to help succeed now and looking ahead.

INTRODUCTION

The goal of this paper is to help those in statistical programming lead roles foster and develop the talent around them by using effective feedback. Feedback for those working in data science positions should focus on the skills and behaviors that will help them be successful now and into the near future. Feedback may cover technical responsibilities such as, advancing their programming language knowledge and/or use of standards, but also highlight and provide feedback on behavioral capabilities such as communication and influence.

PAST, PRESENT, FUTURE

In the past, most companies took the one-size-fits-all approach to treating patients, often targeting disease areas that are most prevalent. Global regulatory data standards such as CDISC were not mandatory for US-based submissions and challenges were often structuring the data to meet internal specifications. Ideas such as data FAIRness (Findable, Accessible, Interoperable, Reusable) were not necessarily promoted or enforced. These roles were typically more task-based programming, creating static statistical outputs based on specifications. Statistical programming interactions were often limited outside of project biometric groups and stakeholders were less diverse.

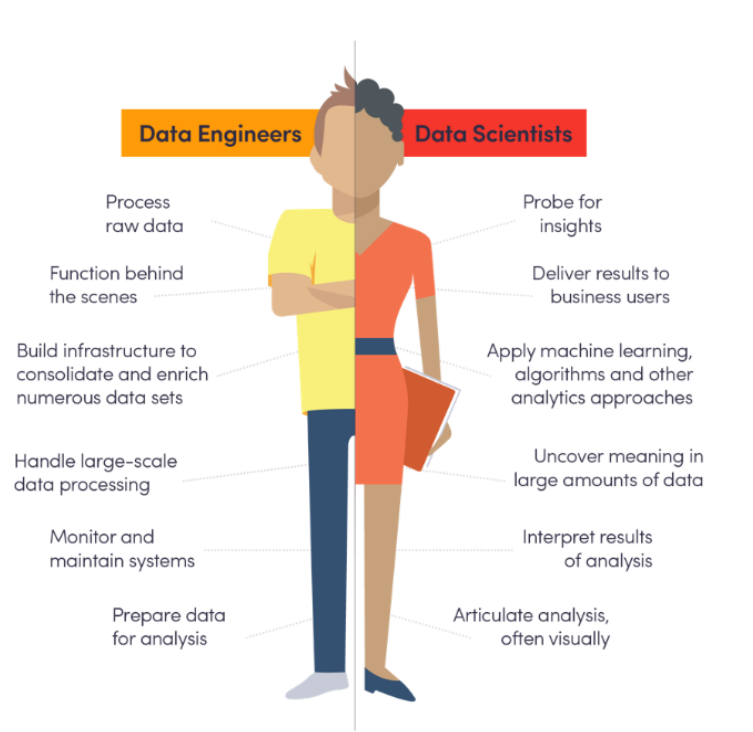
Over the last 5-10 years, the landscape of those in statistical programming roles have evolved significantly and the challenges are more complex. Organizations have recognized certain patients respond much better to targeted therapy, sometimes associated with specific genetic mutations or expressions. Understanding new data sources such as biomarker, patient-reported outcomes and Real World Data (RWD), while liaising with those subject matter experts directly is important so the statistical programmer can help create the appropriate datasets to help produce important medical insights. Many resourcing models employ statistical programmers from all over the globe and interaction with various cultures is increasing. With the enforcement of CDISC standards, most companies have an extensive and dependable suite of macros to deal with common types of standard clinical trial data and may already be automating data processing and analysis outputs. Technical programming skills are still important but ideally programmers are spending less time debugging code for standard outputs and focusing on understanding the less-traditional and more complex data sources. The regulatory landscape and competition is fiercer than ever, so most companies are trying to file much faster than before, with aggressive timelines where the statistical programming group is heavily impacted. Instead of consistent smaller teams with reasonable timelines, project leads need to work closely with management to ensure resourcing is sufficient at all times so they can produce statistical analysis as soon as possible. Technical role recruiting is increasingly looking to hire critical thinkers with strong communication and project management skills at all levels, not just management, where these skill sets have traditionally prioritized.

What will the future hold? The authors expect it will be even more of a continuation of the examples listed above. More new data types, further aggressive timelines, innovative and complex trial designs and increased global resourcing. Technical programming and analytical skills will still be required, but having the ability to communicate with other colleagues, influence stakeholders, project manage and feel comfortable making decisions will remain critical.

EMPOWERING STATISTICAL PROGRAMMERS

Currently, statistical programmers are empowered to make decisions instead of having to seek management approval. Not only is this allowing individuals to develop critical thinking and problem solving, it is giving back valuable time to the clinical teams to stay focused on delivering results. Statistical programmers are becoming much more accountable for decisions that are being made. The clinical landscape is now trying to answer many questions in parallel as seen in basket and adaptive trial designs.

As the role continues to evolve, the expectations for the statistical programmer is shifting towards a cross between a data engineer and a data scientist. In some organizations, you will have separate roles for data engineers, data scientists, and statistical programmers. In agile organizations, they are combined into a single role of a statistical programmer.



Source: <https://www.datasciencecentral.com/profiles/blogs/why-every-data-scientist-needs-a-data-engineer-1>

For the statistical programmer, it is of the utmost importance to understand what analysis problems are preventing the team from moving forward with next steps. Whether it is clinicians looking to find trends in dose reductions a few months after treatment initiation, or medical writing preparing the final clinical study report 4 months earlier for an accelerated submission, the statistical programmer will be a vital role to work closely with their stakeholders and give viable options for solutions. It is expected that individuals in these leading roles should be participating in discussions that should focus on brainstorming new approaches to data analysis trying to expedite delivering results without jeopardizing the integrity of the data. As a result, communication becomes critical. Preparing dashboards, interactive visualizations and subject profiles on real data will be significant resources necessary for these discussions. The statistical programmer's expertise is vital for exploration of the clinical data analysis and suggestions of visuals to help their team members understand the story depicted through the data. What seems to be lost now are the days of formal instructions (another time-limiting step), as the roles work closely with their stakeholders to formulate solutions. In tandem, the roles of the lead programmers must be able to disseminate tasks to their respective supporting programmers to ensure high-quality results are being produced. The examples discussed above are leadership skills that are critical to the success of a statistical programming lead.

FEEDBACK

Clinical trial statistical programming and analysis landscape has evolved where successful individuals must develop both technical and behavioral capabilities. After all, data scientists have been named the "sexiest job of the 21st century"¹ where roles are highly desirable and competitive. One key method to optimize growth, nurture strengths and address gaps is through feedback. In basic terms, feedback is information about the performance of an individual completing a task. Feedback can be provided peer-to-peer or manager-to-individual contributor, or vice-versa. Its important feedback is evidence-based, honest and communicated respectfully in a timely manner. A strong feedback culture is increasingly common as it is viewed as crucial for the growth of an organization.² Several common techniques for providing feedback are discussed later.

In the past much of the feedback for statistical programmer analysts may have resided in the deliverable turn-around times, coding practise and communication response times. Those in data science roles still had to communicate with others, influence stakeholders and make decisions but the landscape was less complex and diverse interactions likely less frequent. The focus needs to be on technical and behavioral skills that will help everyone succeed and have substantial impact on getting medicines to patients sooner.

It is important to recognize feedback can be positive or constructive. Constructive feedback can be used to help bridge a development gap or modify an existing behavior that has a negative impact on a task or surrounding team. Positive feedback is equally as important - it increases engagement in their work (feeling valued), builds confidence in individuals and creates a positive work environment. It also can provide clarity on what you may be looking for from an individual, especially in our complicated data-based landscape.

FEEDBACK AND LEADERSHIP CONSIDERATIONS

As referenced earlier, it's important to consider the following when providing feedback:

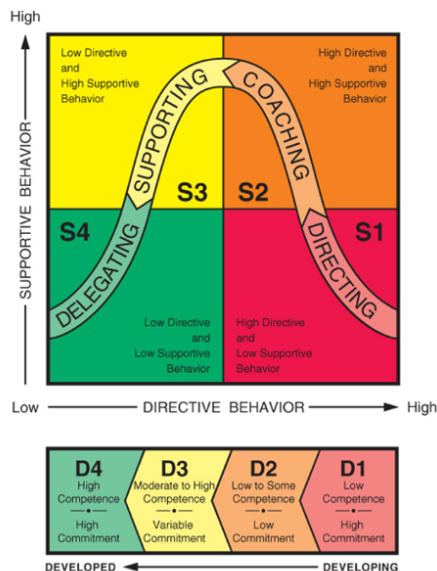
- timely - the closer to the event or task being referenced the better; it is still fresh in the mind of the individual receiving and the person delivering. If it is constructive feedback and it is clear the individual recognizes their development needs, it may be worth providing time for them to reflect before having a conversation.
- accurate - ensure information on behaviors or performance are not vague. Be transparent and clear to avoid ambiguity on changes needed to be made.
- respectful - individuals and cultures absorb feedback differently, and those providing it may need to navigate the communication appropriately. It is common to work with very diverse individuals on global teams and interaction can be different.

A common technique to deliver effective feedback is using Situation Behavior Impact (SBI). Situation provides the event, task or time. It's an important detail so an individual receiving feedback knows exactly where and/or when the feedback is referring. A poor example could be at the office several weeks after a conference presentation to say "Great application presentation", instead of being more specific. "I really liked the application you showcased at the Programming and Strategy Stream at the PhUSE conference" provides the person an exact timeline. To continue building on feedback include the behavior displayed. Just providing a compliment without the "why" can leave it ambiguous to the receiver. "I really liked your presentation as it was clearly well prepared and considerate to the diverse audience". Impact is the final touch, but usually considered the most important part of feedback. Stating what impact a situation or behavior had closes the feedback process and allows both the recipient and the giver to propose a solution or rectify their mistakes.⁴ An example using the same theme is a comment like "Your knowledge sharing made it easy to follow along, had fantastic visuals and useful references to implement. I am going to try to build this application into my study analysis". These statements will ensure the receiver is clear why and how their actions positively affected others in an event, which will help promote similar behaviours in the future. Much more examples and concepts of the SBI framework can be found through various mediums, including workshops, books and online.

Ideally, feedback should be delivered in person 1-1 but given the large, diverse, global teams this may not be practical so it may involve a videoconference. Over email may be necessary but careful thought must be considered to ensure the message is received well. Many people believe that as virtual communication increases, cultural differences will become less important—but in fact, the exact opposite is true.³ In addition, what remains critical regardless in person or virtually, when giving and receiving feedback is to be honest, constructive, and be able to learn and build upon each interaction to further improve the feedback cycle.

As mentioned above, feedback can be provided peer-to-peer or manager-to-individual contributor or vice-versa. It is believed that the same principles of delivering feedback can be applied in all instances and the negative stigma can also be removed by applying some basic situational leadership principles. Situational leadership is a great tool to help define a leader/subordinate relationship and facilitate dialogue as needed dependent on the skill set.

Situational Leadership® II Model



Source: <https://medium.com/@blanchardinternationalindia1/situational-leadership-focusing-on-goals-rather-than-persons-d0cf59111333>

One hidden benefit of situational leadership and situational development is to focus on the goal itself, not just the people when delivering feedback. Directing the feedback towards the goals eases the tension amongst employees and employers alike⁵ By shifting the focus on to the goal itself, the feedback becomes much more tangible and gives context that can be referenced in situations of recognition and correction and these can be two-way conversations. The dialogue/feedback culture can be shaped to create a safe and trustful environment to create action plans for execution and give an opportunity to voice opinions openly.

Often leaders demonstrate a one-size fits all approach to leadership; one style of leadership for everyone on the team. As described in the feedback considerations section above, it is critical when building effective teams to utilize each team members' skill-sets and behaviors. The challenge is which leadership style to apply to in the task at hand.

One key fact about situational leadership is being able to learn from prior experiences and build into the feedback cycle for the next time around. Well executed feedback helps build trust and transparency ultimately leading to a high-performing team. Situational leadership can be a powerful tool to facilitate feedback.

These leadership techniques should be familiar with most managers; after all one of the key responsibilities of a people leader is to spend time building relationships with colleagues, coaching employees to reach their full potential and aligning teammates toward a common goal.⁶ The authors encourage data scientists at all levels, not just managers, to consider researching these techniques in greater detail to help themselves to help their team to reach maximal impact and contribution. The more feedback you give, and listen to as well, the better you will get at it!

CONCLUSION

The statistical programming lead is expected to wear many hats in the current clinical landscape. A combination of their expertise in statistical programming, data analysis, or exploration are valuable assets they possess to help their team members generate insights from the clinical trial data. They are expected to be leaders and proactively seek solutions to summarize complex data. They are required to disseminate tasks to their supporting team members. They are the ones accountable for delivery results of high quality. On top of all of that, they are being asked to project resource needs for management awareness. This can be overwhelming for a single person to manage and evaluate if they are on the right track.

This paper has discussed some strategies to consider when giving/receiving feedback. Feedback is a gift. It's equivalent to getting a gift receipt with a birthday present. It's up to the recipient to do what they want with it.. They can keep it if they like it or need it or they can send it back. The same concept applies to feedback. Embrace it. It is up to the individual to decide how they want to process it and take actions/next steps. As a data scientist, it is important to realize that with all of the tasks that are being put on their shoulders, giving feedback is necessary but also receiving feedback on their actions is critical for keeping high engagement within the team. Being accurate, timely, and respectful when delivering feedback are the keys to success to build trust within the team. Using

techniques for feedback like SBI can help ensure effective feedback. Also, learn from these discussions and adapt as needed in future situations. Finally, situational leadership principles can shape feedback focus on goals instead of individuals to remove negative reactions.

REFERENCES

1. Harvard Business Review. 2012. Data Scientist: The Sexiest Job of the 21st Century [ONLINE] Available at: <https://hbr.org/2012/10/data-scientist-the-sexiest-job-of-the-21st-century>
2. Forbes. 2019. Three Steps For Creating A Feedback Culture [ONLINE] Available at: <https://www.forbes.com/sites/forbeshumanresourcescouncil/2019/01/03/three-steps-for-creating-a-feedback-culture>
3. Rotman Magazine - University of Toronto. 2016. Questions for Erin Meyer [ONLINE] Available at: <https://www.rotman.utoronto.ca/Connect/Rotman-MAG/IdeaExchange/Erin-Meyer>
4. engagedly. 2016. THE IMPORTANCE OF SBI WHEN GIVING FEEDBACK IN THE WORKPLACE [ONLINE] Available at: <https://engagedly.com/importance-of-sbi-when-giving-feedback-in-workplace/>
5. Medium. 2017. Situational Leadership — Focusing on Goals Rather Than Persons [ONLINE] Available at: <https://medium.com/@blanchardinternationalindia1/situational-leadership-focusing-on-goals-rather-than-persons-d0cf59111333>
5. Forbes. 2019. What Does It Mean To Be A People Leader [ONLINE] Available at: <https://www.forbes.com/sites/forbeshumanresourcescouncil/2019/03/15/what-does-it-mean-to-be-a-people-leader/#32c991ec292b>