What Analytics Training do I need?

"Success is a group project. When outliers become outliers it's not just because of their own efforts. It is because of the contribution of lots of different people" - **Malcolm Gladwell**

Advanced analytics is booming. Successful companies have realised that a data driven approach to decision making leads to improvements in processes and outcomes. Leaders in analytics are finding a significant return on investment from their analytics projects and strategies.

However, there is a large analytics skills gap – not enough people have the right skills to drive analytics to the heart of business decision making. We know that analytics works – how do we make it work for us?

There is no one size fits all approach to analytics training. Different people in different organisations have different requirements.

However, there are some tools that you can use to guide you on your journey. This article is a collection of tools that you can use to assess what training is right for you.

Business – Analytics – Business Analytics

All analytics projects start with a business problem. We have customers that we want to keep or devices that we need to service. Different business problems require different analytical approaches – many require different types of analyst.

We can think of analytics expertise as falling into 4 quadrants:
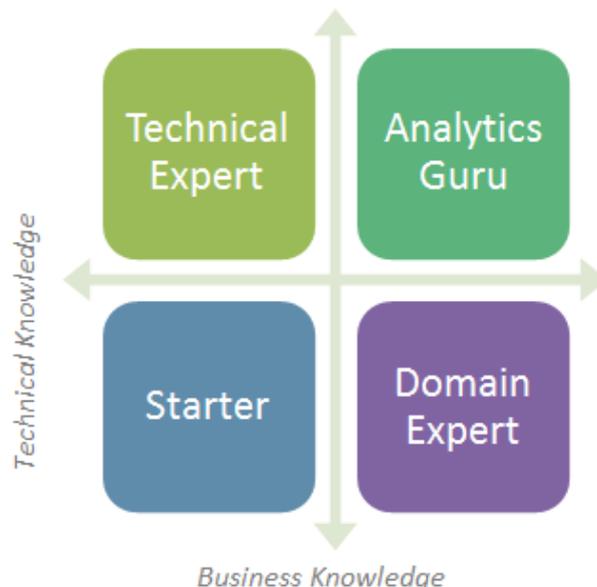
Being an analytics guru requires deep industry knowledge and extensive knowledge of statistical techniques. However, not everyone needs to be an analytics guru. Some people need to know just enough analytics to ask the right sorts of questions of analysts or consulting companies. Being an analytics manager or a project manager on an analytics project requires a very different skillset to being an analyst.

Take a step back and think about where you need to be in terms of the balance between business skills and experience and statistical techniques. Remember also that business knowledge is not just knowledge of a particular line of business but a broader knowledge of business processes, change management and domain expertise.

Key Skills

There are certain key skills that enable us to become better at what we do. Every toolbox needs a hammer – just as every analyst needs to be able to read SQL. However, different job types require different expertise – an Analytics project manager may need to be familiar with Prince II and Agile methodologies as well as the CRISP-DM data mining framework.

The following scatterplot situates some of these key skills on our Analytics Expertise Quadrant:
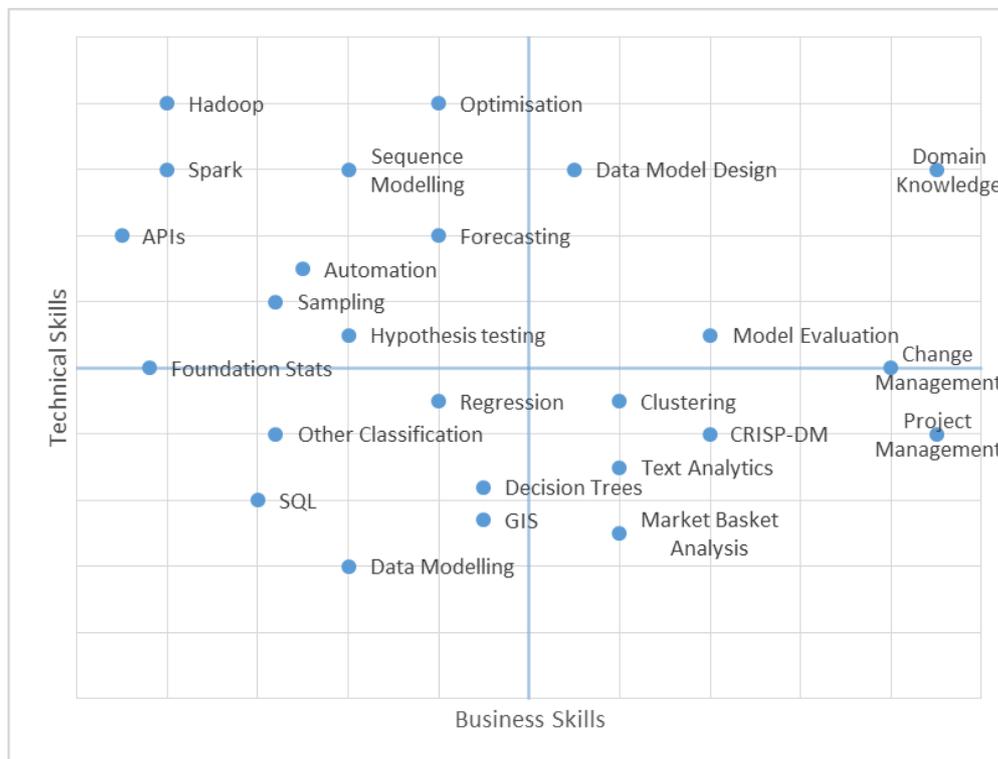
Think again about what kind of analyst you want to become. There may be some foundational technical skills that you need to move from a starter to a statistical analyst. However, business skills such as change management are key to growing into an analytics guru.

3 Stages of Growth

We can think of our growth as analysts at 3 different stages. Each stage of growth requires a different training intervention:
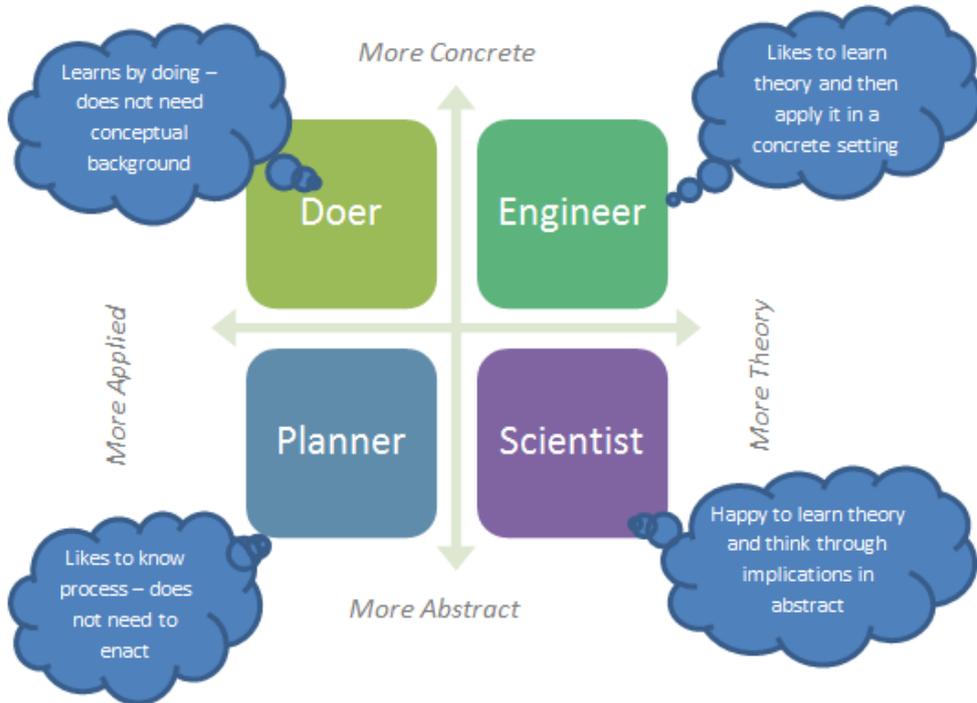
Stage	Key Aspect	Learning Intervention
Beginners	Beginners are just finding their feet. The focus on learning should be on basic data mining techniques and concepts including interaction with toolsets such as R and SPSS.	• Online Learning • Introductory Texts • Shadowing peers • Classroom training
Growers	Grower's knowledge is expanding at an exponential rate. They are gaining fluency in the application of techniques and development of projects.	• Advanced classroom training • Mentoring • Project work
Masters	Masters are fluent in analytics. They have worked on multiple projects and have a high level of expertise in statistical and business techniques.	• One to one training • Peer group learning and discussion • Self-Learning • Advanced Project Work

Ways of Learning

We are all different. It should be no surprise that we all have different ways of learning. Some of us prefer to learn in groups, others prefer to learn alone. Some people prefer to know the theory first while others prefer to just apply a set of tools to solve a problem.

Considerations of how we learn are important in assessing the best training for our own needs. We can think of learning styles as being abstract versus concrete and theoretical versus applied.

Think about how you like to learn – that will guide the best type of training for you.

More Concrete

Learns by doing – does not need conceptual background

Likes to learn theory and then apply it in a concrete setting

Doer   **Engineer**

More Applied   *More Theory*

Planner   **Scientist**

Likes to know process – does not need to enact

Happy to learn theory and think through implications in abstract

More Abstract

Praxis Makes Perfect

Ancient Greek philosophers defined praxis as the process by which a lesson is applied. They believed that we do not learn just by taking in knowledge but by acting out this knowledge on the world. Tony Wilson of Factory Records defined praxis as "doing something, and then only afterwards, finding out why you did it!"

In analytics praxis makes perfect! We learn analytics best by doing analytics. Make sure that any training that you undertake is associated with a project or task though which you can practice your mastery. Remember – analytics isn't just about doing analysis it's about analysis in a business setting.

At each stage of the learning practice task may be most appropriate:

Analysis of sample datasets

Participate in analytics project

Lead project in new skill area

Beginner   Grower   Master

Gap Analysis Framework

A gap analysis of areas for improvement may help you to design the best training plan for your situation.

Think about the gaps under the headings that we have discussed:

Skills Area	Is the gap in your knowledge relating to business practices or statistical techniques?
Skill Details	What skills specifically do you need to develop?
Learning Maturity	How mature are you in your learning in the area? What previous experience do you have?
Learning Style	How do you learn best?
Mastery Practice	What is the best way for you to apply your learning?

A sample analysis is presented for your reference:

Name	John Brown
Background	John is a CRM analyst – as part of his job he has developed churn models for different market segments. John believes that a measure of customer lifetime value would a valuable addition to this churn analysis
Skill Area	Statistical Techniques
Skill Details	Customer Lifetime Value Analysis
Learning Maturity	John is an analyst with a number of years' experience and good statistical background. He has participated in data mining projects and delivered models that have been deployed. However, the survival analysis techniques typically used for this type of analysis are new to him.
Learning Style	John likes to learn by applying theory. He likes to work at his own pace and works best when examples are relatable to his job.
Mastery Practice	Developing a customer lifetime value model for one of his customer segments and deploying this within the business would allow John to achieve mastery of the task.
Training Recommendation	John is a technical analyst with good experience of his business domain. His experience suggests that he will be a quick learner in a new analytical task setting and that he may learn best by doing. A one to one training session or coaching with an experience analyst may be the most appropriate training methodology.

What's best for me?

Our training needs are multi-faceted. There is no one way to become a better analyst. Different roles require different skillsets and as we mature our skills requirements change. Classroom training is not always the right answer to your training need. Sometimes a one to one training session with a skilled analyst or a long term mentoring program may be the best value for you and your organisation.

We recommend that you take the framework applied in this article and think about how it fits your situation. Once you have done this talk to internal and external experts to put in place a plan that fits your needs.

About Presidion

Presidion have operated for over 20 years and have been the pioneers in implementing cutting edge predictive analytics solutions with top UK and Irish organisations. We specialise in helping organisations leverage their data to deliver tangible practical returns on investment, aligned with their strategies.

Presidion works with both government and commercial clients, currently partnering with hundreds of organisations enabling them to understand what has happened in the past, anticipate what may happen next to take appropriate and timely strategic decisions for their organisation.