



Developing Data Analysts

Please cite as: Woodward, R., and Tuck, C. (2023) *Developing Data Analysts*. Teaching Business and Economics. Vol 27, No 2. Summer

Russ Woodward and Clare Tuck highlight the increasing importance of data analysis skills in the job market and where they might fit into the business curriculum.

Introduction – a Developing Imperative

From both a business and by implication a business education point of view, the importance and position of data analysis and analytics continues to grow. Technology has transformed our ability to harvest, manage and use data on a scale hitherto unimaginable.

One only has to look at the job market to see the implications of this for careers. The role of data analysis in business relevant job descriptions and person specifications is on the rise. Graduate employment websites in their job profiles and labour market overviews are giving increasing attention to this, (Prospects, 2023).

In the published information and advertising of business service firms such as consultancies, data analytics, especially linking to the phrase ‘big data’, are a major part of the offer such companies provide to the corporate world. Relevant sector associations and their studies evidence greatly increased investment in data analyst capability both by consulting firms and by industrial firms themselves (Consulting UK, 2018). This again shows the business graduate role is increasingly likely to involve analysis of sizeable amounts of data for organisational purposes.

It should be noted that there is often a distinction made between the ‘data analyst’ role and the ‘business analyst’. As noted by Northeastern University: the ‘data analyst’ role involves analysing datasets to uncover trends and insights that are subsequently used to make informed organisational decisions. ‘Business analyst’ roles focus on analysing various types of information to make practical, data-driven business decisions, going on to implement changes based on those decisions. The extent of overlap in practice means that strength in both related fields is an important outcome of a good business education.

We can already see the growing importance of data analysis skills reflected in business curricula globally, especially at undergraduate level and above. In the United States there are many business degree strands or majors now focussing on Management Information Systems, becoming almost as familiar as Business with Marketing or with Accounting. As early as 2012, research by Jackson and Chapman 290 Australian and UK academics were asked to

identify three core business graduate capabilities. The three most popular were people person, manager and business analyst.

Essentially business graduate employers and business school course designers are both putting data analysis more centre stage with obvious implications for business curricula at all levels, including GCSE, A Level, BTEC and T-Levels. As opportunities for revision of school and college level business courses approaches, we would encourage educators at this level to give this urgent consideration. Here are some insights from higher education that may be helpful in doing so.

Embedding

The issue remains how, in the detail of curriculum design and the practice of teaching and learning, data analysis can best be further incorporated in business studies.

One of the key ways, we would argue, is what modern educational theory would call embedding, i.e. making sure it has an integral presence in all the regular module and topic areas of business studies. In the area of marketing, data analysis can relate to marketing intelligence, socioeconomic and other data with regard to market segmentation as well as social media customer activity and profiles. One should note that as well as statistical aspects, qualitative data also matters, e.g. customer sentiments in marketing. With regard to the accounting/finance area of business studies – we should note inherent presence of numerical data. However the analytical aspect can be extended in terms of making informed projections using past and present financial data, as well as causal formula data. Microeconomics based forecasts for financial performance is a significant aspect for professional courses in accounting e.g. AAT. In the field of people and human resource management, wider data such as labour market intelligence may be key for recruitment, selection and training planning, but also firm data such as staff turnover can be vital HR diagnostics for problem solving. In the more overarching aspect of change management, data findings from research can be the basis for recommendations and action whether conducted internally or externally.

We should also recognise the merits of achieving embedding at earlier stages long before the FE or HE focus on business programmes takes place; for example there is scope for school and college business tutors to liaise with functional skills departments – numeracy, literacy and IT to ensure that gentle business data analysis aspects, as examples, are incorporated. This can link to calculation of figures, comprehension on business relevant textual material, and learning to work with packages like Excel with business relevant tasks.

Stand Alone Modules

In terms of preparing students as candidates for the leading professional service jobs of business analyst, it is likely that stand-alone modules within business degree programmes is a necessary ingredient. This is part of the University of Hull business degree programme at University Centre Grimsby: The TEC Partnership, with the Business Analysis module at level 6. Perhaps the best way to convey what is involved is through consideration of the two assessment components:

The first is a **Company Troubleshooting Investigative Research Plan** (officially termed a case study report).

- Here students may select a company and start with some published information of criticism or struggles of the firm. The key parts would be the research and analysis plan as if called in by the boss.
- A Primary Research Plan. Word Count 1000 approx. Here questions to address would include.
 - What research would you carry out, especially if given a free hand by the boss?
 - What methods would you use: Interview, Survey/Questionnaire, Focus Groups, Observations?
 - Who would be the subjects: Senior/Dept Managers, Workers, Customers?
 - What kinds of question or criteria would you use?
 - Would this be generating qualitative or quantitative data or both?
 - Are there any possible limitations for this research, or hazards in the data?

A Secondary Research Plan. Word count 1000 approx.

- What data would you request from the company?
- About which depts./functions of the business, e.g. marketing, accounts, HR, production?
- What form would the data take: qualitative/quantitative?
- Are there any possible flaws or hazards with using such data?
- What data might you want to use from the public domain, e.g. competitors, sector, economy?

An Analysis Plan. Word count 1000 approx.

- How would you analyse the data collected for diagnostic purpose?

A major aspect here would be how primary and secondary data gathered could be compared. E. g. staff surveys and worker turnover; store observations and customer complaints.

There would be also scope for analysis within primary data, e.g. staff focus group and customer surveys, and within secondary data, perhaps involving some unpacking/disaggregation first, e.g. sales data both for in store and online, benchmarked against sector trends.

The analysis plan phase could also incorporate which business analytical tools could be deployed, e.g. SWOT or Porter's 5 Forces, as well as which IT packages could be used, e.g. Excel, SPSS.

A useful guide for level of detail/clarity required would be for the student to prepare the work as though a colleague might have to undertake the trouble-shooter work in their place, going with this as a document.

The second assessment is a **Company Data Analysis Project Report**.

Here, students are provided with a limited but informative set of qualitative textual data, e.g. extracts from articles, relating to the internal and external environment factors in a company's performance, as well as a limited but informative set of quantitative data on the company and

its environment (e.g. figures for firm sales, a competitor's sales, and some macroeconomic data).

The tasks would be to undertake a purely Qualitative Data Analysis based on the material provided, a purely Quantitative Data Analysis and then an Integrated Discussion including conclusions for the firm.

In this assessment, levels of depth could relate to the specificity of qualitative and quantitative analysis techniques undertaken as well as the degree of analysis and synthesis expected or achieved.

These tasks could be made gentler, as for the introductory stage of a degree module or as formative/summative assessment work in FE.

Linking to assessment 1, students could be given the following activity – with scope for variation.

- Consider a firm in the: manufacturing/retail/professional services/leisure/logistics sector.
- The firm is experiencing problems with: sales/production, quality control, memberships, staffing.
- You have been called in as a troubleshooting consultant.
- State and explain at least two pieces of primary research you could carry out.
- State and explain: at least one piece of qualitative data, and at least one piece of quantitative data you could request from the company for secondary research.

Such a task enables business applied understanding of qualitative/quantitative and primary/secondary research and data concepts.

Linking to assessment 2, a task with graphs and short text passages provided, could require students to explain the internal and external factors affecting a firm from the quantitative and qualitative data. They could potentially thread from the data onto acronyms like SWOT and PEST.

We should note that in style terms, the context scenarios provided in some A level Economics assessment are a useful guide, but the key difference is that here, there would need to be clearer company focus.

Other Aspects: Guest Speakers

For a relatively new style module or feature on a programme, the analysis/analytics class can benefit significantly from guest speakers, for which the geographical flexibility is now greater because of scope for use of Teams and similar live online facilities. Guest speakers can be effective for the students, in terms of showing the value of the module they are doing, the labour market importance of the learning, and the particular skills most in demand. Guest speakers are also valuable for staff in terms of direction as to where to take or develop the course, what aspects to diminish, what aspects to grow/update.

As noted earlier there are a great many firms involved in business oriented data analysis; including departments of the big accountancy and consultancy firms. However there is a growing number of smaller firms dedicated to data gathering/analytics solutions for companies. The latter can be more distributed around the country in terms of base. Some include the core function in their name, e.g. Applied Data Science; others have ideal outcome words/phrases in their name, e.g. Clarity or Insight.

Conclusion

The kind of analyst that can explore data, but also present findings in a digestible way, with meaningful business recommendations based on them, is in growing demand. This has implications for business courses at all levels. In some ways it signifies the importance of extending the written and presentation based assignment work to develop these vital skills and ensure that students are as prepared as they can be for the world of work they will be stepping into.

Russ Woodward and Clare Tuck teach on the business degree programmes at University Centre Grimsby: The TEC Partnership.

References and Resources

AAT (2022a) Qualifications 2022 Key Themes Available at <https://www.aat.org.uk/system/files/assets/AAT-Qualifications-2022-Key-themes.pdf>

AAT (2022b) Qualification Specification: Level 4 Diploma in Professional Accounting Available at: <https://www.aat.org.uk/system/files/assets/AAT-Level-4-Diploma-in-Professional-Accounting-Q2022-qualification-specification.pdf>

AAT (2023) Qualification Specification: Level 3 Diploma in Accounting Available at: <https://www.aat.org.uk/system/files/assets/AAT-Q2022-level-3-diploma-accounting-qualification-specification.pdf>

Consultancy UK (2018) . How Data Analytics are Changing the Consulting Industry. Available at: <https://www.consultancy.uk/news/18522/how-data-analytics-are-changing-the-consulting-industry>

Jackson, D. and Chapman, E., (2012). Non-technical competencies in undergraduate business degree programs: Australian and UK perspectives. *Studies in Higher Education*, 37(5), pp.541-567.

Northeastern University. Data Analyst v Business Analyst. Available at: <https://www.northeastern.edu/graduate/blog/data-analyst-vs-business-analyst/>

Prospects (2023a) Job Profile: Business Analyst. Available at: <https://www.prospects.ac.uk/job-profiles/business-analyst>

Prospects (2023b) Job Profile: Data Analyst. Available at: <https://www.prospects.ac.uk/job-profiles/data-analyst>

