

## **‘Innovation and the Application of Knowledge for More Effective Policing’**

### **N8 Policing Research Partnership Catalyst Project**

#### **REVIEW OF THE EMPOWERING DATA SPECIALISTS IN POLICING CPD PROGRAMME**

##### **THE ACTIVITY**

In 2018, the N8 Policing Research Partnership’s *Training and Learning* and *Data Analytics* strands delivered an innovative continuing professional development (CPD) programme to a cohort of police staff engaged in data analysis work. Through a series of modules covering the methods and theoretical understanding underpinning recent advances in data analytics, the aim was to augment the skills and knowledge of practitioners undertaking roles involving the extraction, manipulation, analysis and reporting on data and information. In short, its purpose was **to empower Data Specialists in Policing**.

The programme ran eight modules delivered over ten days between January and September 2018. Participants were drawn from the eleven N8 PRP forces, with three places open to each force. Each module was co-developed and co-delivered by policing and academic colleagues to ensure content was balanced between theory and practice. Academic experts were drawn from N8 institutions and other universities across the north of England and the Midlands. Alongside policing partners from the N8 PRP, there were contributors from the Metropolitan Police, Transport for London and a research consultancy.

##### **KEY POINTS**

Harnessing the full potential of the application of data analytics in policing organisations requires an investment in data specialists, both in formal training and learning opportunities and in attitudes to the introduction of new methodologies and software.

Participant feedback demonstrated that the programme was well received and that there is an otherwise unmet demand for such a programme. Feedback collected from participants throughout the duration of the programme identified:

- **89% felt they gained in confidence**
- **86% developed new knowledge from the programme**
- **79% said the programme met their expectations**
- **70% aspired to apply their learning to their daily working practices with a further 25% wanting to adopt new approaches but feeling constrained by organisational barriers**

##### **CORE PROJECT DESIGN AND DELIVERY TEAM**

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## **BACKGROUND**

The concept for a “series of linked CPD units for an audience of police staff who are data specialists” originated from the Head of Corporate Development at Humberside Police, who recognised that although police forces are data rich, and technologies and techniques in fields such as big data, machine learning and predictive analytics are becoming more accessible, forces still struggle to turn their data into information that can be used to make practical differences to the public. Lack of recognition, low graded roles, and limited career development opportunities for analytics staff contribute to this struggle, with staff recruited into analytics roles often being expected to learn on the job.

## **PROGRAMME DEVELOPMENT**

Accepting the need for investment in data analytics skills and capabilities, the N8 PRP’s Training and Learning and Data Analytics strands agreed to work with N8 PRP policing partners to design and pilot a co-produced CPD programme to meet this need. Adopting a modular structure for the programme enabled coverage of a breadth of topics and facilitated co-production through a distributed workload, with Module Leaders responsible for developing content.

To ensure that each module provided a balance between theory and practice, academic experts were teamed with policing partners with the expectation that practitioners would provide case studies and where appropriate sanitised data for practical classes. Academic experts were drawn both from N8 institutions and other universities across the north of England and the midlands, while alongside policing partners from the N8 PRP, there were contributors from the Metropolitan Police, Transport for London and a research consultancy. In total, there were 36 speakers, from eight universities, seven police forces and one other organisation.

The programme was intended to give taster sessions and a grounding in data analytics methodologies. No previous experience was required and there was no expectation that anyone would become overnight data scientists, instead the objective was to steer participants towards a variety of academic courses offering formal qualifications relevant to data analytics. Full details of the modules, speakers and learning materials can be found at: [www.n8prp.org.uk/data-analytics/data-specialists-in-policing/](http://www.n8prp.org.uk/data-analytics/data-specialists-in-policing/)

## **PARTICIPANTS**

The programme was designed to have a broad appeal and attract participants from a variety of roles involving the management, analysis, reporting and presentation of data in the N8 PRP’s policing partners. Along with crime (strategic and intelligence) analysts, the programme aimed to attract staff from roles using other sources organisational data to inform decision making, e.g. financial, human resources, partnership working and demand management. Forces each nominated three participants forming a cohort of 33 regular attendees with two further places being taken by staff seconded to roles in agencies outside the N8 PRP.

Before starting the programme participants were asked to complete a short biographical profile, 28 profiles were completed revealing that data specialists are experienced, well qualified and undertake diverse roles.

- Length of service ranged from 1 year (n=2) to 20+ years (n=2) with the median length of experience in policing roles being 10 years.

- More than two thirds of completed profiles gave information about degree level qualifications held. The majority being undergraduate degrees (n= 13), with higher awards including a Postgraduate Diploma (n=1) and Master's degrees (n=5). In the main part, the degree subject studied was relevant to a data specialist role, with an almost equal split between STEM subjects (n=8) and other quantitative subjects e.g. Social Sciences, Psychology and Geography (n=9).
- All profiles provided details about the post held with Intelligence and Performance roles being the most frequent (n=18), other roles included staff from Business Change, Research and Evaluation teams. All roles could clearly be described as a data specialist, with two in particular (Data Modeller and Data Delivery Assistant) suggesting that forces are beginning to employ staff to fulfil specific data analytics functions.

### CHALLENGES

Acquiring sanitised data for practical classes was inhibited by data protection concerns and time limitations. Where police data were not available, administrative data held in open source repositories were used. This proved an advantageous solution as it illuminated contextual data sources that practitioners had otherwise not known about: *"The most useful thing I earned from the Fundamentals module was being signposted to open source data I was not already aware of such as UK Data Service and RadStats"*. Another module involved the re-use of data from a different N8 project, which greatly improved the learning experience: *"We were able to bring our own data set to the day so that made it a lot more relevant to our work."*

In line with the model of co-production and co-delivery, it had been hoped to use both police and university premises to host programme modules. Due to a combination of class size and the lead-in time to request and install software on police computers using police premises proved impracticable.

Attendance on the ten day programme required a significant investment in time from policing partners, after making such a significant commitment, it was difficult for participants to find opportunities for dedicated development time where they could put their learning into practice and experiment with new tools and techniques in their workplace setting.

Taster sessions using open source software had a steep learning curve, while the benefits of using such tools were appreciated and participants were keen to use these tools in daily working practice, there was an organisational reticence in some police IT teams to even consider adopting these tools. Encouragingly, the use of open source software was approved in some forces as a result of staff participation in the CPD programme.

### CONCLUSIONS

The N8 PRP *Training and Learning* and *Data Analytics* strands were successful in delivering a co-produced CPD Programme to policing data specialists. Feedback collected from participants throughout the duration of the programme demonstrated that it was well received and satisfied an otherwise unmet demand.

*This training is very welcome, and I think it will be very valuable in my role.... 'Data management' is something I do a lot of, but have never been formally trained... I don't currently use 'New forms of data' and 'Cognitive and machine learning', and I see these as gaps in my knowledge... From my perspective as an analyst manager the CPD training has given an insight into a variety of new areas not covered in conventional police analyst courses.*

# DATA SPECIALISTS IN POLICING

N8 PRP CPD PROGRAMME

## REVIEW

### What was involved?



8 modules



10 days



33 participants



36 speakers



45 sessions



**5175 hours**

### Programme

- Fundamentals
- Data Management
- GIS & Visualisation
- Modelling
- Emerging & New Forms of Data
- Machine Learning
- Ethics & Data Governance
- Data Driven Organisations

### Participant Feedback



Content Relevance



Gained in Confidence



Developed Knowledge



Expectation Met



Impact on Practice

want to spend more time on analysis and less time on data preparation

**85%**

**25%**

want to adopt new approaches but feel constrained by organisational barriers