The critical incident technique as a tool for gathering data as part of a qualitative study of information seeking behaviour

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Background to Critical Incident Technique

- CIT 1944
  - Development of methodological tool to explore critical requirements for specific occupational groups or activities

- Flanagan 1954
  - A set of procedures for usefulness in solving practical problems

- Butterfield et al. 2005
  - Championed CIT flexibility and diversity of disciplinary application, however highlight terminological inconsistencies
“a brief but memorable information seeking episode” Urquhart (2001)

• Large scale questionnaire based studies:
  – Radford 2006; an examination of young people’s perceptions of public libraries
  – Small & Snyder 2009; an examination of the impact of school libraries on student achievement and motivation
  – Tenopir, King & Bush 2004; Tenopir et al. 2009; Tenopir 2012; examinations of academic faculty’s readership of scholarly articles

• Qualitative information behaviour studies:
  – With a focus on particular professions or professions
  – On Google searching
  – Serendipity in search
  – Everyday life information seeking – ELIS

• Limitations of CIT:
  – Too few critical incidents (Davenport)
  – Lack of reflection on CIT method (Urquhart)
Research Methodology

• Study conducted in 2011, sponsored by an engineering software provider focusing on the oil and gas sector

• Explored the role of information systems in enhancing health, safety and emergency response

• Also uncovered insights into information seeking behaviour of oil and gas professionals in a health and safety context
Research Methodology

• Two stages to the project:
  – Quantitative online questionnaire survey of over 370 individuals
  – Qualitative in-depth interviews utilising critical incidents as a focus

• Second stage of the project forms the basis of this paper, which is considered in terms of Flanagan’s (1954) five key steps of the CIT process
Step One – Understanding the general aims of the activity being studied

• Main focus of this study was the role of information systems and information behaviour in enhancing health and safety in the oil and gas industry

• Research team with background in information behaviour and solid understanding of health and safety management in oil and gas sector

• Input from commissioning company to ensure industry perspectives reflected in instrument design
Step Two – Making plans and setting specifications

• Critical incidents pre-determined by participating companies

• To ensure consistency interviews were conducted by same member of research team

• Pilot interviews were conducted with 3 relevant individuals to ensure effectiveness of research instrument

• Critical incidents were predetermined through consultation with participating companies
Step Three – Collecting the data

• Study based on four critical incidents with an operator, a contractor, a manufacturer and a logistics company

• 11 interviews were conducted across the four participating companies with individuals from differing levels in the organisational hierarchy

• No obvious evidence of ‘collusion’ taking place in an attempt to provide consistent accounts

• Use of CIT gave focus to interviews enabling description of information seeking behaviour without a deep understanding of the information domain on a conceptual level
Step Four – Analysing the Data

- Interviews lasted between 40 – 120 minutes, were recorded with permission and transcribed verbatim
- Transcripts analysed with recurring themes being coded in an iterative process

Step Five – Interpreting and Reporting the Results

- Interview transcripts were independently analysed by two members of the research team to increase reliability of the interpretation of the data gathered
Conclusions

• Inconsistent application of CIT has been highlighted by various observers as a weakness

• The present authors believe that CIT can be used flexibly

• However the critical insight with which research instruments are designed is important, with testing of research instruments in open and exploratory ways to evaluate their true contribution

• Quantitative vs. Qualitative – both are achievable with CIT

• CIT advantageous when examining information behaviour as method for illuminating impact of context on information behaviour

• CIT must be used in a thoughtful manner with full recognition of its weaknesses in the design of future research