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STEM in Teaching Qualitative Research

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# STEM in teaching Qual Res

Graham R Gibbs

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COUNT project, funded by the HEA

# Real title

- **Count: Developing STEM Skills in qualitative research methods teaching and learning**
- Two stages
  - Survey of teachers of qual res
  - Interviews with selected practitioners and teachers

# The age of big data

Recent Horizon programme



Medical data, marketing data, cosmology, Large Hadron Collider.

# Big data for the Social Sciences too

- ❑ Web pages, web sites
- ❑ Facebook
- ❑ Twitter
- ❑ Support groups e.g. in health
- ❑ Fan groups e.g. music
- ❑ Hobby groups
- ❑ Gaming etc.
- ❑ YouTube
- ❑ Printed media
- ❑ Radio and TV

All big data but also all  
textual, visual, aural

Therefore need  
qualitative analysis

# How to collect and analyse these data

- CAQDAS to the rescue
- = **C**omputer **A**ssisted **Q**ualitative **D**ata **A**nalysis
- Now includes tools for **text analysis, data mining** and digital resource acquisition
- Widely used at the research level
- But what about undergrad level?
- → Survey of teachers of qualitative research methods.

# Survey

- Using Bristol Online Survey, April 15<sup>th</sup> to May 12<sup>th</sup>.
- N=115
- Of which 90% British, 4% other EU.
- 2 from USA

# Disciplines represented

| Discipline | %  |
|------------|----|
| Business   | 11 |
| Education  | 15 |
| Health     | 16 |
| Management | 9  |
| Psychology | 13 |
| Sociology  | 17 |

BUT N.B. 19 sociologists across approx. 160 institutions must mean about 6% response rate (assuming 2 qualitative sociology teachers per institution).



# Methods taught

- Over 42 different methods mentioned. Most mentioned several
- Over 2/3 mentioned: Interviews and Case Studies
- Over half mentioned: **Mixed Methods**/Participant Observation/Grounded Theory/ Ethnography
- Substantial minority mentioned:
  - Narrative/Action Research/Thematic Analysis/Discourse Analysis/Document use/Comparative Analysis/Life History/Biographical/Participatory/Phenomenology/Feminist/Video/Conversation Analysis
- **Qual Res very diverse. No dominant method.**

# Teaching to undergraduates

|                                | Qualitative Research<br>% per yr. | CAQDAS<br>% |
|--------------------------------|-----------------------------------|-------------|
| Year 1                         | 22                                | 3           |
| Year 2 (and Yr. 3 in Scotland) | <b>72</b>                         | <b>13</b>   |
| Final Year                     | <b>48</b>                         | <b>12</b>   |
| Undergrad<br>dissertation      | <b>42</b>                         |             |
| Other                          | 13                                |             |
| Not taught to<br>undergrads    |                                   | 60          |

N.B. some non-responses in CAQDAS.

# CAQDAS/Text analysis s/w used

|               | Program       | n         |
|---------------|---------------|-----------|
| Undergrad use | <b>NVivo</b>  | <b>21</b> |
|               | Atlas.ti      | <b>2</b>  |
|               | HyperResearch | <b>1</b>  |
| Postgrad use  | NVivo         | 46        |
|               | Atlas.ti      | 9         |
|               | MAXQDA        | 2         |
|               | Wordsmith     | 1         |
|               | EndNote       | 1         |
|               | HyperResearch | 1         |
|               | SPSS ??       | 3         |
| Site licence  | <b>NVivo</b>  | <b>63</b> |
|               | Atlas.ti      | 7         |
|               | MAXQDA        | 2         |
|               | Wordsmith     | 1         |

Only **11%** said they were thinking of expanding undergrad provision of CAQDAS

# Reasons s/w not used

Percentage of the 67 respondents not teaching at undergrad level

| Big Reasons  | %  |
|--|----|
| No <b>time</b> to use software                       | 49 |
| Would take <b>too long</b> to teach                  | 52 |
| No teaching expertise in using software              | 40 |
| No access to software                                | 34 |
| Data sets used are too small to warrant software use | 34 |

# Reasons s/w not used cont.

Percentage of the 67 respondents not teaching at undergrad level

| BUT N.B.  | %  |
|---|----|
| No local support for software use   | 25 |
| Software does not support methodologies / theoretical approach used                   | 10 |
| Software not relevant or not needed for the methodologies / theoretical approach used | 19 |
| I was not aware such software existed   | 10 |

- ?? Biased sample
- One respondent said "Teaching labs not adequately set up to support teaching"

# Main Barriers to CAQDAS/text analysis in institution

Percentage of all respondents

| Reason   | %  |
|--|----|
| Lack of space in the timetable:                  | 50 |
| Too much additional learning for undergraduates: | 50 |
| Lack of qualified teachers:                      | 42 |
| Lack of experienced tutors to support students:  | 40 |
| Lack of sufficient PC labs with the software:    | 38 |
| Also N.B.  | %  |
| Lack of good learning resources:                 | 18 |
| Insufficient good data sets available:           | 9  |

# Main Barriers to CAQDAS/text analysis in general

□ **Time** (mentioned by 21)


Hardly any time to spend on qual in syllabus as it is, so core teaching focuses on qual fundamentals.

time constraints do not allow attention to statistical analyses

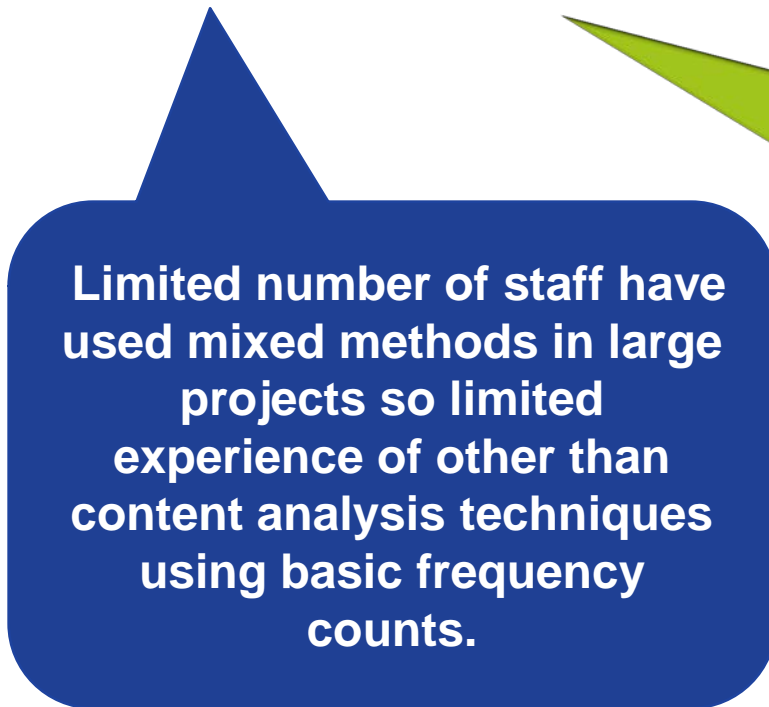
Too little time to cover qualitative methods in general - there is a 5 week lab and that's it.

# Main Barriers to CAQDAS/text analysis in general

## ▣ **Teachers lack expertise** (mentioned by 15)



**Lack of staff  
expertise and  
confidence.**



**Limited number of staff have  
used mixed methods in large  
projects so limited  
experience of other than  
content analysis techniques  
using basic frequency  
counts.**



**A lack of  
experienced  
tutors to  
support the  
teaching**



# Main Barriers to CAQDAS/text analysis in general

## ▣ **Philosophical divide** (mentioned by 8)

**I see these as significantly different methods. I want my undergrads to understand the ontological differences, before we support them in considering mixed methods.**

**Some people object to quantizing qualitative data**

# Main Barriers to CAQDAS/text analysis in general

## ▣ **Quants dominate** (mentioned by 4)

**They already get three years of quantitative! The qualitative is usually crammed into one or two lectures, so they need to be dedicated purely to qualitative.**

## ▣ **Student Fear of Numbers** (mentioned by 6)

**Generally speaking students don't like language of numbers :-)**

# Staff use

- **69%** had used quantitative approaches to assist with the qualitative analysis of data or with reporting its results in their own work

|   |           |
|---|-----------|
| Basic frequency counts of code use:                   | 44        |
| Word frequency counts:                                | 35        |
| Keyword in context:                                   | 23        |
| Co-occurrence analysis:                               | 7         |
| Producing scales or typologies from qualitative data: | 14        |
| Mixed methods approaches:                             | <b>32</b> |

# Materials/media used in teaching

| Material/media  | %   |
|---|-----|
| PowerPoint slides:                                      | 100 |
| Recommended texts:                                      | 98  |
| Reading lists:  | 86  |
| Prepared lecture notes:                                 | 85  |
| Required reading:                                       | 73  |
| Film/video/animation:                                   | 72  |
| Case studies/role plays:                                | 64  |
| Tutorial/problem sheets:                                | 63  |
| Worked examples sheets:                                 | 48  |
| In-class Quizzes/Tests:                                 | 45  |
| Artifacts (as products, models, drawings/designs):      | 23  |
| Computer-aided learning software / learning technology: | 21  |
| Task specific software:                                 | 12  |
| Other ICT:  | 11  |



# Where third party resources have come from

| Resource  | %         |
|---|-----------|
| <b>YouTube:</b>   | <b>50</b> |
| Your Libraries' digital resources (such as e-Books):          | 44        |
| Other courses on your Institution's VLE (such as Blackboard): | 32        |
| Professional body website:                                    | 24        |
| <b>HEA website:</b>   | <b>19</b> |
| Discipline specific website (such as OnlineQDA.hud.ac.uk):    | 16        |
| Corporate website:  | 14        |
| Another Institution's website / VLE:                          | 11        |
| National educational repository (such as JORUM):              | 8         |
| Open access repository (such as OpenLearn):                   | 8         |
| iTunesU:  | 8         |
| Box of Broadcasts:  | 8         |
| Flickr:   | 4         |
| Other (incl. own developed resources):                        | 3         |
| BUFVC:  | 1         |
| MOOC / opencourseware (such as edShare):                      | 0         |

Lots of use of available digital resources

# Conclusions

## Stem skills and software in qual research teaching?

### ■ Pro

- Many use techniques and software
- Software site licence common

### ■ Cons

- Diverse methods and lack of expertise
- Time/space
- Student objections/challenging

### ■ Resources needed – video and data sets

# Next stage

- Interviews
- Examination of resources etc. respondents have indicated they are willing to share.