Methodologies for mapping genre families

Researching Disciplinary Writing
Investigating Academic Writing within Higher Education: methodological issues workshop

Sheena Gardner
University of Birmingham, UK

37th International Systemic Functional Linguistics Congress
July 2010, UBC Vancouver Canada
An Investigation of Genres of Assessed Writing in British Higher Education

RES-000-23-0800
2004-2007

Hilary Nesi (PI), Sheena Gardner        Paul Thompson        Paul Wickens
        + Jasper Holmes, Sian Alsop, + Alois Heuboeck, + Signe Ebeling, Maria Leedham

THE UNIVERSITY OF WARWICK        The University of Reading        OXFORD BROOKES UNIVERSITY
Project Aims

- Develop a Corpus of British Academic Written English (BAWE)

- Characterise genres of proficient university student writing across disciplines and years of study
1. Ethnographic Account of Disciplinary Contexts

2. BAWE corpus development & formal description

3. Genre Classification and Description

4. Multi-dimensional Analysis of Register

5. Analysis of Linguistic Forms and Functions
1 Investigations of Disciplinary Contexts (Emic perspectives)

National degree benchmarks
National subject guidelines
University guidelines (assessment, PPD)
Departmental documentation
Tutor interviews (Nesi & Gardner)
Student interviews (Gardner & Powell)
Assignment submission forms
Tutor on Engineering Projects:

- In year four they have a team project with tasks similar to what they’ll get in employment. They work in teams with students from a range of engineering disciplines to tackle various complex engineering problems. They produce a document with costings targeted at a Venture Capital company.
On Engineering Reports:

- There is a standard structure. They have a layout of headings and a description of the sorts of things that would go under each of those headings, and they map whatever they’ve done onto that.

- Although a third-year project may be similar in structure to a laboratory report written in the first year, the writer will have to assimilate, evaluate and integrate a wider range of information.
Engineering Students:

“Basically we make a summary first the reasons are if someone in industry wants to know what we’re doing, they haven’t got time to read through they just want to know what’s going on. Then the introduction .. Contents .. Then a theory which takes a huge chunk it’s explaining everything…”

“It doesn’t matter how good the project is, if it isn’t well written, it won’t get good marks”
Engineering assignments:

- Laboratory reports
- Project reports
- Reflective journals
- Posters (e.g. for transport museum)
- Site investigation reports (both factual and interpretative)
- Funding proposals
- Business plans
- Essays
“I try to use different opinions. I say someone’s opinion, then counter it with someone else’s. I weave my own perception in but I’d never say “this is what I think” directly. I use some arguing and counter but I always go back to my introduction stance.

…I put across my argument always and a. you have to consider the popular argument at the time. You don’t want to go against the flow completely as you don’t have the skill to do that. But b. I consider what the professor will think.”
Disciplinary Context Investigation

Informs genre families classification through disciplinary views on assignment

- Purpose
- Audience
- Structure
- Relationships between genres
- Nature of evidence
- Values
- Thinking behind the writing
Strand 2

[these slides not on handout!]
Corpus Development

- Collect assignments (Alsop & Nesi)

- Tag files to submit to ESRC and Oxford Text Archives (Heuboeck et al); the BAWE corpus is available to researchers at http://ota.ahds.ac.uk/headers/2539.xml

- Develop interfaces for end users;
  - the BAWE corpus can be searched using the corpus query tool SketchEngine at http://www.sketchengine.co.uk/open/
  - Visualisation trees (cf system networks) available by genre family at www.coventry.ac.uk/bawe
### 30 + Corpus Disciplines

<table>
<thead>
<tr>
<th><strong>Arts &amp; Humanities</strong></th>
<th>Archaeology, Applied Linguistics, Classics, Comparative American Studies, English, History, Philosophy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Life Sciences</strong></td>
<td>Agriculture, Biological Sciences, Food Sciences, Health, Psychology, Medical Science</td>
</tr>
<tr>
<td><strong>Physical Sciences</strong></td>
<td>Architecture, Chemistry, Computer Science, Cybernetics &amp; Electronics, Engineering, Mathematics, Meteorology, Physics, Planning</td>
</tr>
<tr>
<td><strong>Social Sciences</strong></td>
<td>Anthropology, Business, Economics, HLTM (Hospitality, Leisure and Tourism Management), Law, Politics, Publishing, Sociology</td>
</tr>
</tbody>
</table>
# BAWE Corpus: 2858 Texts

<table>
<thead>
<tr>
<th>Disciplinary Group</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Humanities</td>
<td>255</td>
<td>229</td>
<td>160</td>
<td>80</td>
</tr>
<tr>
<td>Life Sciences</td>
<td>188</td>
<td>206</td>
<td>120</td>
<td>205</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>181</td>
<td>154</td>
<td>156</td>
<td>133</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>216</td>
<td>198</td>
<td>166</td>
<td>202</td>
</tr>
</tbody>
</table>
Contextual and Textual Information

Each corpus file includes information on the
- writer (age, L1, gender, schooling, course),
- module (title, department, disc. group)
- assignment (title, level, date, grade >60)
- number of words, s-units, p-units, tables, figures, block quotes, formulae, lists, listlikes, abstract, w/s, s/p, ...
- and genre family
Politics
Engineering
Law
Hospitality, Leisure &amp; Tourism Management
Hospitality, Leisure &amp; Tourism Management
Hospitality, Leisure &amp; Tourism Management
Food Sciences
Biological Sciences

of the mind stretches from Vladivostok to Vancouver, and provides for the peace and international
shows a beluga whale blows a ring at the Vancouver Aquarium. Figure 4.1 Another case
Montréalaise Québécoise exiled in Canada (Vancouver: Talonbooks, 2001) at 11. This paper
Montréalaise Québécoise exiled in Canada (Vancouver: Talonbooks, 2001) Rosalyn Higgins
the 6 largest cities, Toronto, Montreal, Vancouver, Ottawa, Calgary and Edmonton respectively
international business demand comes from Vancouver where a large convention and meetings clientele
Gourmand title, a top restaurant in town of Vancouver being unique in the area (Appendix 10).
distance from large and gateway cities such as Vancouver and Calgary—both have international airport-
Overview [31 October 2005] Vancouver Restaurants, Weekly Wines [1 November
Symposium on Biological Control of Weeds, Vancouver, Canada pp 83-88. Agriculture Canada, Ottawa


text.discgroup SS
text.discipline Hospitality, Leisure &amp; Tourism Management
text.educ OSa
text.genre Proposal
text.grade M
text.ill Hungarian
text.level 4
text.sex f
text.studentage 26+
div1.a
div1.type section
div2.type
Further research with the BAWE corpus
(British Academic Written English)

Visualisations
Methodology
Search measure

181 hits
of
measure
time

of

many eyes
Strand 3
Classification of Genre Families

- Read 2761 assignments > 2858 texts
- Group texts with similar purpose & staging as genres
- Group genres with similar purpose and similar structure, and name:
  E.G. The Critique Genre Family includes
  book review (History)
  product evaluation (Engineering)
  results interpretation (Biology) +
Why genre families?

- Enables comparison and mapping across disciplines by ‘genre’
- Enables comparison and mapping across levels by ‘genre’
- Provides a manageable framework for more detailed analysis
  - of genres
  - of register
  - of context
13 Genre Families

1. Case Study
2. Critique
3. Design Specification
4. Empathy Writing
5. Essay
6. Exercise
7. Explanation
8. Literature Survey
9. Methodology Recount
10. Narrative Recount
11. Problem Question
12. Proposal
13. Research Report
# 1. Case Study

to demonstrate/develop an understanding of professional practice through the analysis of a single exemplar  **[purpose]**

description of a particular case, often multifaceted, with recommendations or suggestions for future action  **[generic stages]**

typically corresponds to professional genres (e.g. in business, medicine, and engineering)  **[genre network]**

**[examples]**
- business start-up
- company report
- investigation report
- organisation analysis
- patient report
- tourism report
## 2. Critique

to demonstrate/develop understanding of the object of study and the ability to evaluate and / or assess the significance of the object of study

includes descriptive account with optional explanation, and evaluation with optional tests

may correspond to part of a research paper, professional design specification or expert evaluation

<table>
<thead>
<tr>
<th>generic stages</th>
<th>genre networks</th>
</tr>
</thead>
<tbody>
<tr>
<td>academic paper review</td>
<td>legislation evaluation</td>
</tr>
<tr>
<td>approach evaluation</td>
<td>policy evaluation</td>
</tr>
<tr>
<td>business / organisation evaluation</td>
<td>product/ building evaluation</td>
</tr>
<tr>
<td>financial report evaluation</td>
<td>project evaluation</td>
</tr>
<tr>
<td>interpretation of results</td>
<td>review of a book/ film/ play/ website</td>
</tr>
<tr>
<td>system evaluation</td>
<td>teaching evaluation</td>
</tr>
</tbody>
</table>
### 3. Design Specification

| to demonstrate/develop the ability to design a product or procedure that could be manufactured or implemented | • application design  
• building design  
• database design  
• game design  
• label design  
• product design  
• system design  
• website design |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>typically includes purpose, component selection, and proposal; may include development and testing of design</td>
<td>May correspond to a professional design specification, or to part of a proposal or research report.</td>
</tr>
</tbody>
</table>
## 4. Empathy Writing

to demonstrate/develop understanding and appreciation of the relevance of academic ideas by translating them into a non-academic register, to communicate to a non-specialist readership

may be formatted as a letter, newspaper article or similar non-academic genre

may correspond to professional writing

| • expert information for journalist |
| • expert advice to industry |
| • expert advice to lay person |
| • information leaflet |
| • job application |
| • letter (e.g. reflective letter to a friend; business correspondence) |
| • newspaper article |
5. Essay

to demonstrate/develop the ability to construct a coherent argument and employ critical thinking skills

introduction, series of arguments, conclusion; may be discussion (issue, pros/cons, final position); exposition (thesis, evidence, restate thesis); factorial (outcome, conditioning factors); consequential (input, consequences, restatement); challenge (opposition to existing theory); or commentary (series of comments on a text)

may correspond to a published academic or specialist paper

• challenge
• commentary
• consequential
• discussion
• exposition
• factorial
6. Exercise

to provide practice in key skills (e.g. the ability to interrogate a database, perform complex calculations, or explain technical terms or procedures), and to consolidate knowledge of key concepts

data analysis or a series of responses to questions

may correspond to part of report or research paper

calculations data analysis mixed (e.g. calculations + essays) short answers stats exercise
# 7. Explanation

<table>
<thead>
<tr>
<th>Overview of a</th>
<th>business</th>
</tr>
</thead>
<tbody>
<tr>
<td>concept/job/legislation</td>
<td>instrument</td>
</tr>
<tr>
<td>methodology</td>
<td>organism/disease</td>
</tr>
<tr>
<td>product development</td>
<td>site/environment</td>
</tr>
<tr>
<td>species/breed</td>
<td>substance/phenomenon</td>
</tr>
<tr>
<td>system/process</td>
<td></td>
</tr>
</tbody>
</table>

To demonstrate/develop understanding of the object of study; and the ability to describe and/or account for its significance includes descriptive account, explanation. may correspond to a published explanation, or to part of a research paper or professional design specification.
8. Literature Survey

to demonstrate/develop familiarity with literature relevant to the focus of study includes summary of literature relevant to the focus of study and varying degrees of critical evaluation may correspond to a published paper or anthology, or to part of a research paper

| •Annotated bibliography | •Research methods review |
| •Analytical bibliography | •Literature review |
| •Literature overview | •Review article |
| •Anthology | •Literature overview |

•Annotated bibliography  
•Analytical bibliography  
•Research methods review  
•Literature review  
•Review article  
•Anthology
9. Methodology Recount

to demonstrate/develop familiarity with disciplinary procedures, methods, and conventions for recording experimental findings

describes procedures undertaken by writer and may include Introduction, Methods, Results, and Discussion sections, or these functions may be realised iteratively

may correspond to a section within a research report or research paper

- computer analysis
- data analysis report
- experimental report
- field report
- forensic report
- lab report
- materials selection report
- (program) development report
# Variation in Methodology Recounts across Disciplines

<table>
<thead>
<tr>
<th>Biological Science</th>
<th>Computer Science</th>
<th>Engineering</th>
<th>Food Science</th>
<th>Physics</th>
<th>Psychology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1. Introduction</td>
<td>Introduction</td>
<td>Objective</td>
<td>1. Introduction</td>
<td>Introduction</td>
</tr>
<tr>
<td>---</td>
<td>2. Theory</td>
<td>Theory</td>
<td>Introduction</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Materials and Method</td>
<td>3. Design</td>
<td>Apparatus and Methods</td>
<td>Method</td>
<td>2. Experimental Details</td>
<td>Method</td>
</tr>
<tr>
<td>Results</td>
<td>4. Implementation</td>
<td>Observations and Results</td>
<td>Results</td>
<td>3. Results</td>
<td>Results</td>
</tr>
<tr>
<td>Discussion</td>
<td>5. Results and Analysis</td>
<td>Analysis of Results</td>
<td>Calculation</td>
<td>4. Discussion</td>
<td>Discussion</td>
</tr>
<tr>
<td>(Conclusion)</td>
<td>6. Conclusion</td>
<td>Discussion</td>
<td>Discussion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Future Work)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(References) (22/52)</td>
<td>(References) (29/64)</td>
<td>(References) (63/83)</td>
<td>(References) (53/69)</td>
<td>(References) (15/18)</td>
<td>(References) (8/10)</td>
</tr>
</tbody>
</table>
10. Narrative Recount

to demonstrate/develop awareness of motives and/or behaviour in individuals (including self) or organisations

fictional or factual recount of events, with optional comments

may correspond to published literature, a professional proposal or a report, or to part of a research paper

| •accident report       | •biography                        |
| •account of literature search | •character outline |
| •account of website search | •creative writing: short story |
| •plot synopsis         | •reflective recount               |
| •report on disease outbreak | •urban ethnography               |
# 11. Problem Question

| to provide practice in applying specific methods in response to simulated professional problems | • law problem question |
| problem (may not be stated in assignment), application of relevant arguments or presentation of possible solution(s) in response to scenario | • logistics simulation |
| problems or situations may resemble or be based on real legal, engineering, accounting or other professional cases | • medical problem |
### 12. Proposal

to demonstrate/develop ability to make a case for future action
includes purpose, detailed plan, persuasive argumentation

| • book proposal  
| • building proposal  
| • business plan  
| • catering plan  
| • legislation reform  
| • marketing plan  
| • policy proposal  
| • procedural plan  
| • research proposal |

may correspond to professional or academic proposals
13. Research Report

to demonstrate/develop ability to undertake a complete piece of research including research design, and an appreciation of its significance in the field

may include Literature Review, Methods, Findings, Discussion; or may include several 'chapters' relating to the same theme

may correspond to a published experimental research paper or topic-based research paper

| •research article  
| •Research project  
| •topic-based dissertation |
Genre Families mapping across

Disciplinary Groups
Levels of Study
Departments/ Courses
Individual student pathways
Social Sciences

Chart by J Holmes
Physical Sciences

- Case study: 170
- Critique: 65
- Design specification: 49
- Empathy writing: 65
- Essay: 49
- Exercise: 37
- Explanation: 16
- Literature survey: 19
- Methodology recount: 9
- Narrative recount: 6
- Problem question: 6
- Proposal: 4
- Research report: 21

Chart by J Holmes
Mapping Essays by Level

Graph by J Holmes
by Disciplinary Group and Level
# Mapping Sociology Genres

<table>
<thead>
<tr>
<th>Genre Families</th>
<th>Genres</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essay</td>
<td>Exposition</td>
<td>‘Why do some women have children; why do some women not do so?’</td>
</tr>
<tr>
<td></td>
<td>Discussion</td>
<td>European women both challenged and supported the Empire building project. Discuss.</td>
</tr>
<tr>
<td>Narrative</td>
<td>Urban Ethnography</td>
<td>Two bookshops in Leamington Spa</td>
</tr>
<tr>
<td>Recount</td>
<td>Library Search</td>
<td>Library exercise</td>
</tr>
<tr>
<td>Critique</td>
<td>Research Methods</td>
<td>Carefully evaluate the methods used by Ken Pryce in his study ‘Endless Pressure’.</td>
</tr>
<tr>
<td></td>
<td>Evaluation; Book Report</td>
<td>A review of The Bell Curve: Intelligence and Class Structure in American Life</td>
</tr>
<tr>
<td>Proposal</td>
<td>Research proposal</td>
<td>Learning to Belong to Your Country – An Evaluation of the Nationalistic Education in Hong Kong – A proposal to a specific funding body (Quality Education Fund in Hong Kong)</td>
</tr>
<tr>
<td>Research Report</td>
<td>Dissertation</td>
<td>Sociology Under Siege? The Welcome Onslaught of Realist Social Theory</td>
</tr>
</tbody>
</table>
Strand 4
Multidimensional Register Analysis

Biber’s team in Northern Arizona tagged lexicogrammatical features and identified dimensions of variance

> Mapping genre families by register
Biber’s general dimensions, eg Narrative:

NARRATIVE

<table>
<thead>
<tr>
<th>6+ General fiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>0+ Popular non-fiction</td>
</tr>
</tbody>
</table>

FACE-TO-FACE CONVERSATIONS
Religion, Editorials
-1+ PUBLIC CONVERSATIONS, *classics* NARRATIVE RECOUNT

Press reviews, *history*

-2+ TELEPHONE CONVERSATIONS *archaeology, health*

Professional letters LIT. SURV., ESSAY
Academic prose *publishing, sociology* EW, PQ

-3+ Hobbies, *law, mathematics*

BROADCASTS CRITIQUE, RR, EXPLANATION *economics* MR, EX, PROPOSAL
*engineering, food science, chemistry, biology*

-4+ DESIGN SPECIFICATION

NON-NARRATIVE

Key: CAPS = oral genres; ** = BAWE disciplines

Features of Dim 2 Narrative/Non-narrative dimension (Conrad and Biber 2001):

positive features
- past tense verbs
- third-person pronouns
- perfect aspect verbs
- public verbs
- present participial clauses

negative features
- (present tense verbs)
- (attributive adjectives)
Mapping genre families Dim 2

-1.11 Narrative Recount
  -2.48 Essay
  -2.62 Literature Survey
    -2.74 Empathy Writing
    -2.77 Problem Question
    -2.86 Case Study
    -3.07 Critique
    -3.12 Research Report
    -3.59 Explanation
    -3.65 Methodology Recount
    -3.79 Proposal
    -3.85 Exercise
  -4.02 Design Specification

______________________________________________________________ less narrative →

Dim 2 The narrative dimension (past tense verbs, 3rd person pronouns,...)
Mapping genre families Dim 4

1.6 Problem Question
1.3 Proposal
   0.8 Empathy Writing
   0.7 Design Specification
      -0.5 Case Study
      -0.7 Narrative Recount
   -1.3 Exercise
      -1.6 Critique
      -1.8 Essay
   -2.3 Explanation
   -2.4 Research Report
   -2.5 Methodology Recount
      -3.4 Literature Survey

---------------------------------------------  less persuasive →

Dim 4. The persuasive dimension (modals, suasive verbs,...)
### Genre Family Mapping Dim 4 and 5

<table>
<thead>
<tr>
<th>More Persuasive</th>
<th>0.7, 6.8 Design Specifications</th>
<th>1.3 Proposals -0.5 Case Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Persuasive</td>
<td>-2.4, 7.1 Research Reports</td>
<td>-1.6, 6.3 Critiques -1.8, 5.9 Essays</td>
</tr>
<tr>
<td></td>
<td>-2.5, 7.3 Methodological Recounts</td>
<td></td>
</tr>
<tr>
<td>More Abstract</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---Less Abstract</td>
<td></td>
<td>Narrative Recounts 4.0</td>
</tr>
</tbody>
</table>
Strand 5

Descriptions of ‘academic writing’ not necessarily by genre family

e.g. angle on field (Gardner)
classification of assignment macrostructure and section headings (Gardner & Holmes);
Key word analysis of mental and verbal processes by discipline (Holmes & Nesi);
Complexity of nominal groups by English L1 vs L2 writer (Nesi & Moreton);

.........
Genre mapping potential

1. on Disciplinary Contexts (Department, Course, Year of study, Module, Tutor, Year, Disciplinary Group .... )

2. on Assignment Types (Simple, Compound)

3. in genre families in the BAWE Corpus on Contextual and Textual Information (slide 16)

4. in genre families across the five dimensions of MDA (Biber) and four new dimensions ...
Mapping academic writing

Assignments in literacy events and practices

Assignment macrostructure

Text in BAWE corpus

Registers in MDA

Genre families and genres
Issues mapping of

Assignments into DGs and Levels
Assignments into texts
Texts into genres
Genres into genre families
Registers onto genres
References

- See Handout: Gruber and Gardner (word doc)