More than just having the right headings: supporting students’ report writing

Michelle Reid
University of Reading, UK

Abstract

We tend to assume that report writing is more straightforward than essay writing and that it varies greatly between academic disciplines in HE. However, there is relatively little research on reports as an academic genre of writing. Consequently, the University of Reading, as part of the LearnHigher CETL, conducted a series of qualitative interviews with subject academics from a range of departments in order to investigate their needs when supporting student report writing. This research shows that report writing varies not only between subjects but often within modules in the same subject, and it also encompasses a far wider range of informative writing. These findings highlight the need to consider the audience and purpose of each report, to emphasise the reasons behind the formal structure of reports, and to show reports as a means of formalising and communicating a research process, rather than only a series of structural characteristics. This research has also informed the creation of adaptable report writing resources freely available on the LearnHigher website.

Keywords: report writing; learning development; genre; informative writing.

Introduction: scarcity of report writing research and resources

There is comparatively little support for report writing, either for students or for academic staff at HE level, in contrast to other genres of academic writing like essays. Indeed, it has been noted that report writing is ‘one of the most problematic study-skills areas in which to work out how and what to advise students to do to develop their approaches’ (Race, 2001: 62). This is perhaps because reports are regarded as highly discipline specific with the
requirements of style and form being determined by the discipline, hence not widely applicable outside that field. This is reflected in the common types of report writing guides aimed at students – they often focus on the wider process of scientific or technical writing as a whole, such as Barrass’ very thorough Scientists Must Write (2002), or they are discipline specific, like Harris’ Designing and Reporting Experiments in Psychology (2002). Even the most comprehensive and inclusive guides, for example, Williams’ Writing Reports: Developing Writing (1995) and Van Emden’s and Easteal’s Report Writing (1993), tend to favour one particular style of report, with Williams slanted towards management reports, and Van Emden and Easteal concentrating on technical and management reports. From our experience as Learning Developers, we assume that types of reports vary greatly between departments and that many departments, not just those covering science subjects, require their students to write reports as part of their assessments. However, there is relatively little existing research to confirm these professional observations.

In order to investigate these assumptions, the Study Advice team at the University of Reading, as part of the LearnHigher Centre for Excellence in Teaching and Learning (CETL), conducted research with subject academics into their needs when supporting students who write reports. This research provides the beginnings of an evidence base on report writing as an academic genre and has helped develop resources to enhance student report writing. LearnHigher is a network of 16 partner institutions researching and developing peer-reviewed resources for 20 different learning areas. The University of Reading is responsible for the learning area of Report Writing (as well as the learning area of Time Management) and we have adopted an action research approach to investigate three main research questions:

- What does it mean to describe report writing as an academic genre?
- What are the similarities and differences between reports in different disciplines?
- In which areas of report writing do students experience particular difficulties, and how can they be best supported to develop their practices?

This paper reports on the results of the second phase of our research which aimed to identify academics’ needs when supporting student report writing. It also aimed to gather qualitative data on what distinguishes reports as an academic genre of writing. The final
aim of this project was to use the findings of the research to inform the production of report writing resources.

In the first phase of research conducted by Kim Shahabudin in 2006-07 we held focus groups with students which showed that our existing central Study Advice report writing guides needed to be redesigned to be more attractive, lively, and targeted. However, when we trialled a briefer, tri-folded leaflet called ‘Ten Top Tips for Better Report Writing’ in response to this feedback, we found that it was difficult to engage subject academics in helping to embed the resource in their courses and in giving us opportunities to promote the leaflet to their students. The difficulty we had in engaging academics in our ‘Ten Top Tips’ project led us to realise, ‘there was a need to spend more time developing relationships of trust with academic staff, canvassing their opinions more fully, and working on ways of providing resources suitable for embedded teaching’ (Shahabudin and Turner, 2007). This need to develop a relationship of trust with academics is particularly relevant to report writing resources because subject academics can be reluctant to promote generic guides and workshops on reports as they assume generic resources are not sufficiently specific for their discipline. Therefore, we wanted to create closer links with subject academics by involving them as consultants in our research and by enabling them to influence the development of report writing resources they could embed in their subject teaching.

**Methodology: use of resources to engage subject academics**

Initial contact with academics was made through a brief email questionnaire and an online survey which was posted to a teaching staff mailing list. We asked the academics what types of reports their students write and what aspects of report writing their students struggle with most.

Although the response rate to this questionnaire was lower than we had hoped (10 respondents), the replies were from a wide range of departments (from Law to Cybernetics). The academics who replied welcomed the opportunity to discuss report writing in more depth. As one respondent wrote, ‘I struggled to know what support students needed in this aspect...so would be very keen to hear what you learn from this survey’.
We followed this questionnaire with a series of semi-structured interviews with the respondents, as well as a range of other academics from departments that set reports as assignments. Semi-structured interviews were selected because we wished to investigate how reports function as a genre of academic writing. In Walker’s study of teaching engineering reports using genre theory, she highlights the semi-structured interview as the most valuable research method for identifying report writing genre characteristics in their social context (1999: 14). This is because, in order to understand the report genre as a socially created communication form, detailed, qualitative insights of those experts who define, maintain, and monitor the genre are needed.

In order to persuade subject academics to be interviewed, we used our report writing resources as a way of attracting them to our project and as a means of giving ‘added value’ in return for their time. In response to our first phase of action research, we had redesigned our range of study guides into more targeted, shorter guides in an eye-catching A5 format. This responded to students’ previous criticisms of our old-fashioned A4 report writing guides and their relative lack of enthusiasm for our ‘Top Tips’ leaflet. The redesigned guides also incorporated the feedback from the initial questionnaire with academics. We contacted academics informing them of the new A5 guides and seeking their evaluations of the resources.

The time pressures on academic staff, and the increased number of evaluation activities in Higher Education, has taught us to maximise the benefit gained from any one research activity. Consequently, the semi-structured interviews served multiple aims: 1) To disseminate our LearnHigher resources and gain evaluations of our report writing guides; 2) to understand how academics perceive reports as an academic genre; and 3) to investigate what academics see as students’ greatest needs in report writing.

In contrast to the difficulty in engaging academics with the online questionnaire, we had a far more enthusiastic response to our request for interviews. This is because we had already established a relationship with these academics. Moreover, we demonstrated that their feedback had a direct result on the resources we produce. We were addressing their concerns by offering them resources which could provide potential solutions to the issues they faced when supporting student report writing. In addition, the timing and method of research also played a role; the interviews were held at the end of the summer term just after coursework had been marked, so issues of effective writing were at the forefront of
many academics’ minds. It also seemed that academics were more willing to talk about their experiences of teaching than respond to online questionnaires. It is likely that they perceived the interviews as less of a burden on their time because they were similar to the ongoing informal interactions they have with colleagues which form a vital part of their professional development and the advancement of teaching and learning in their departments. Consequently, the semi-structured interviews helped academics regard us as peers rather than as separate Study Advisers.

We interviewed a total of 12 academics from 7 departments. The questions focussed on:

- What kinds of reports are students asked to do on the course/in the department?
- Do they have assignments which require other forms of factual or informative writing?
- Where do you recommend students to get advice on report writing?
- What defines good report writing?
- What are the areas students have problems with when writing reports?
- What are your first impressions of our report writing study guides?
- What other resources would you find useful for report writing?

**Results and discussion**

**Differences in report writing within and between subjects**

The responses from our interviews with academics showed that there are considerable differences in the types of reports between departments, for example a field report in Agriculture, a lab write-up in Psychology, and a technical report in Cybernetics. More importantly, our research showed that students are being asked to write a number of different types of reports on one course, often within a single module, for example an introductory module to Animal Science may require a student to write reports on field visits, a report reviewing a journal article, and scientific reports demonstrating different research methods. This is also the case for modules in subjects like Geography and Archaeology. These findings reinforce the need for students to pay close attention to their specific briefs whenever they are asked to write a report.
However, academics state that although they give precise and detailed instructions in the brief, students have difficulty following them. This is perhaps because the instructions for writing a report are not isolated in the brief but in a complex interaction of many different texts. For example, in a report for a field visit to a nature reserve on an Ecology module, the brief was broken down into ‘broad aim’, ‘objective and assessment’, ‘points to include’ and ‘activities to undertake’. It is also common that a brief is accompanied by a longer breakdown of what the report is expected to include, as well as a marking criteria that is specific to that report. All these different texts constitute the varied academic discourse that students have to negotiate in their subject.

This complex interaction of texts means that students are not merely ‘writing up’ the record of an investigation, visit or experiment. They are actively engaged in interpreting the discourse of their chosen academic field and understanding the language and methods required for this subject. Carter et al. (2004: 399) identify 12 different texts associated with writing a lab report, ranging from the lab manual for the course outlining the experiment to the graded report returned to the students with the markers’ comments. These all contribute to the ‘genre set’ of related texts which inform the act of writing a report. The finished report is only one of these many texts with which students have to engage in order to develop their understanding of an academic subject. As Carter et al. explain in relation to the lab report:

As a genre set, we understand the lab report not simply as an isolated discourse act (the write-up to be done after the main work of the lab is finished), but as a complex of interrelated discourse acts used to advance the same overall goal of helping students learn science (2004: 399).

This could be applied to all reports. As students at the University of Reading are being asked to write multiple types of report in a single module, it shows that the main aim is not for students to learn how to write each type of report and the formal differences between them, but to use the report writing process as a means of inducting students into their academic discipline and the types of thought processes, knowledge, language and research methods appropriate to that discipline.

Consequently, students need to be encouraged not to see briefs merely as a list of instructions, but to interpret briefs as part of the wider discourse of their subject, some of
which may be implicit and not obvious to novices in the discourse community. For example, a brief for a Social Work report may ask students to ‘refer to their own practice and relevant social work theories’. This apparently simple instruction involves a complex process of comparing and contrasting two very different types of evidence (empirical observations and academic theories). Such a process may be straightforward and obvious to an initiate in the discipline, as it underpins the academic verification of the Social Work profession. However, it can be frustratingly opaque to a student who is unfamiliar with the purpose of theory and also unsure if their professional experience counts as evidence.

When writing reports, students need to identify what type of report they are being asked to write (field, lab, business, technical etc). However, this is not as important as being able to identify the research methods appropriate to that report, and also understand the discipline-specific discourse used to explain these methods and approaches.

Reports as an aspect of informative writing
In addition to the differences between reports, our research shows that students are being asked to submit a far wider range of written assignments than just reports or essays. A number of academics responded to our interviews by saying they set assignments such as portfolios, reflective accounts, literature reviews, and factsheets. They identified these assignments as ‘falling broadly’ within the area of report writing.

Although these are not called ‘reports’, they share a number of key features with reports:

- They have a specific purpose and are aimed at a specific audience;
- They have a formal structure, often with headings or bullet points;
- They are focused on reporting the results of research or an investigation;
- They aim to inform the audience of the key findings of the research.

This finding confirms our own professional observations; in the last few years an increasing number of students have been coming to see Study Advice about assignments which have detailed instructions and a formal structure broken up into sections but which are not clearly defined as a ‘report’, hence students are not sure where to start or what kind of writing is required.
As a result of our research we named this broad category ‘informative writing’. The emphasis on informative communication was a main feature which linked all these different forms of written assignment – they are written for a specific audience and for a specific purpose. The term ‘informative’ draws attention to the audience being informed and the overall aim of the information. Our choice of term was confirmed by contrasting it with the term ‘expository writing’ used by Parkinson in her study of scientific literacy. She argues that that being proficient in the discourse of a specific subject (in her case science) requires an ‘acquisition of a range of literacies...rather than acquisition of skills or grammatical form’ (2000: 369). This emphasis on a network of literacies, as opposed to a fixed set of skills or formal qualities, is valid. However, Parkinson identifies reports as part of a range of literacies which all involve ‘expository writing’ (2000: 380). The term ‘expository writing’ emphasises setting forth an explanation, so it focuses on the internal content and object of the writing, not its purpose. Our findings show that it is perhaps more productive to see report writing as a part of a range of literacies which all require ‘informative writing’ with the focus placed on who is being informed, of what, and why.

When producing report writing resources we need to be aware that reports are part of this wider range of literacies known as ‘informative writing’. In order for our resources to be applicable to students engaged in the wider range of informative writing assessments in Higher Education they need to place emphasis on being able to identify the audience of the writing, and the purpose of the writing.

Report structure as ordered communication, not formal characteristics
Subject academics identified the structuring of reports as a key area where students needed support. They found the main issue was not that students failed to organise their reports into the correct sections or headings (e.g. introduction, method, results discussion, conclusion), but that students did not have a logical order of points within the sections. Academics commented that students did not seem to appreciate the purpose of the report structure. They simply treated headings as sections to be filled in, as opposed to stages in the communication of a research process. This was particularly evident when the sections of a report were not specified in the brief, so students found it difficult to deduce what sections were best to include. It was also evident when students were switching between reports which had different formal conventions (e.g. between a lab report which does not
require a literature review and a longer technical report which does need a review of background literature).

The majority of academics we interviewed said they wanted reports to be correctly structured but they did not want to be prescriptive in specifying only a single structure and order for organising all reports. This was true in the more vocational courses such as Real Estate and Planning, where the academics said that, when students enter into employment, each real estate firm will have their own preferred format for reports. Therefore, it is important that students understand the rationale behind the way a report is formatted to communicate information, as opposed to slavishly following a model. The desire to avoid being prescriptive about report structure was also true in less explicitly vocational subjects, such as Psychology and Cybernetics. Academics wanted students to 'design' their reports, just as they would design an experiment, as opposed to following a set of headings.

This perception of a report’s structure as a means of communicating information further confirms the view that reports are a socially constructed genre determined by the needs of a specific discourse community, as opposed to a set of formal characteristics (see Carter et al., 2004; Marshall, 1991; Walker, 1999). As Sheehan and Flood state:

More than an organizational structure, a genre embodies and articulates a particular social understanding about how a community interprets and responds to recurring rhetorical situations. Therefore, mastering a genre requires more than simply choosing the right ‘format’ and lining up a report ‘structure’ with the elements of a rhetorical situation. Rather, mastering the genre requires one to understand the social, political, and ethical reasons particular communities study and respond to recurring situations in their workplace (1999: 24).

However, students are new initiates into these research communities, so often the formal structure of the report is the only tacit evidence they have of the complex assumptions governing the way these communities function.

An assumption that often remains tacit is that academics use reports as a means of creating a conventional order out of a complex research process. The formality of the report genre is a necessary response to often difficult, iterative and serendipitous
investigations. The report itself is a means of shaping and managing the non-linear research process. As Sheehan and Flood argue in relation to engineering project reports:

[Students] use the genre to *impose* a conceptual structure on an indeterminate situation, creating order in an otherwise fluid space. Then students learn how to interpret the situation *through* the genre to determine appropriate issues and information worth pursuing as they work towards their purpose (1999: 24).

A number of researchers have noted the parallels between the scientific method and the structure of a report (Marshall, 1991; Willmot et al., 2003). However, Swales makes the important observation that a report, and its more developed form, the research article, are not narratives of the research process, but ‘reconstructions’ (1990: 175). He notes that investigations, experiments and empirical research are often prone to serendipity. For example, a result is found by accident and the whole purpose and rationale of the investigation are reversed and reconstructed to suit the findings (1990: 118). This is true of empirical research, but it is also true of reports involving secondary research. The iterative mapping process of searching for journal articles and books then analysing the relationships between their findings is very different to the ordered and prioritised summary of the findings found in a report. Williams offers a more accurate analogy when she compares the stages in a report to the learning cycle of ‘do, reflect, form principles, plan’ (1995: 41). As she says, ‘you can see why the report is an attractive form of writing for student assignments: it places on record the learning process’ (Williams, 1995: 43). However, in reality the cyclical learning process as experienced by students is often highly individual and uneven, in contrast to the regular and generalised form imposed by a report structure. Consequently, reports are rarely straightforward accounts of an investigation; they are a means of organising the outcomes of the investigative process.

The difficulty that students have in structuring reports perhaps indicates a difference in expectations and expertise between the novices of a discourse community (students) and the more proficient experts of that community (academics). When students come to Study Advice, they are often anxious about getting the report structure correct and making sure they have included the appropriate information in each section of their report. Yet academics want students to understand *why* a report is structured in a certain way, not to slavishly follow a set model. It may be, however, that academics are so accustomed to using reports as a means of reconstructing a research process that it has become
naturalised; they have an implicit understanding of the artificial order it imposes on any investigation, which they fail to make explicit in instructions to students. This suggests that students may need to have more opportunities to evaluate and understand reports as a means of communication in their subject, for example, students could be asked to compare the similarities and differences between the conceptual order of a report, and the research process it reconstructs.

**Reports as a synthesis of writing styles and the need to plan reports**

A number of the academics we interviewed suggested the difficulty students have with structuring reports is related to time management. Some students do not leave sufficient time to plan their reports, hence this contributes to the confused order of points within each section. This demonstrates the integral importance of time management to all forms of academic writing; allowing sufficient time for planning and redrafting. However, the lack of planning may also be due to students perceiving reports as simply ‘writing up’, hence they see no need for planning, only recounting what they did. In addition, some students may regard the overall formal structure of a report (the IMRD model – introduction, method, results, discussion) as a sufficient plan.

Nevertheless, the complexity and individuality of every report indicates that there may be a need for students to plan each section in more detail. Far from simply being ‘writing up’, a report often involves a synthesis of different types of research methods, analytical thinking and different styles of writing. For example, in his investigation of scientific reports, Braine identified that ‘they require a mixture of activities such as summary, paraphrase, seriation, description, comparison and contrast, cause and effect, interpretation and the integration of mathematical and scientific data into a text’ (cited in Parkinson, 2000: 372).

These different activities correspond to different sections of a report such as precise summarising in the abstract, expository description in the methodology, and discursive analysis in the discussion. The differing writing styles are linked to the different communicative purposes of each section. Moreover, some of the longest and most complex sections, such as the introduction and the discussion, involve a synthesis of research methods, for example the need to integrate secondary reading with empirical research.
The academics we interviewed indentified the abstract, discussion, and conclusion sections as the ones which students find the most challenging. Interestingly, these are usually the parts of a report that the audience read first in order to judge whether the report is relevant. They are the sections that involve the most challenging forms of writing using higher-level abilities such as analysis and selection.

There is a need to write selectively in the abstract. Academics note that students tend to write too much in an abstract and describe things that the audience know already (e.g. in surveying reports students often describe the size and position of a building when the client is already very familiar with these details of their own building). As a result of including this unnecessary description, students do not have sufficient room to summarise the key methods and findings of their report. This form of selective writing depends on an awareness of the audience’s needs. However, abstracts are normally the last part of a report to be written, so students may have lost sight of their intended readers. It could help to remind students to refer back to their brief and consider their audience when writing the abstract.

In the discussion section, academics would like students to link their findings with the findings in the background literature, and assess whether they confirm or challenge these previous studies. The academics we interviewed described this in various ways such as ‘critical synthesis of data’, ‘triangulating different evidence’, or ‘linking what they found in the field with the secondary literature’. They also compare these discursive writing practices with those used in essays. However, when asked, most academics do not make this similarity with essay writing explicit to their students. It may be that with a complex writing task like a discussion, students need the chance to deduce the necessary requirements by analysing similar examples. This would be a more active learning process than being given a fixed list of requirements for a discussion section. Indeed, when using a genre-based approach to teaching report writing, Marshall states that it is far more effective to allow students to ‘discuss examples and arrive at a consensus on the principles to be used in their writing’ (1991: 6). By evaluating examples of the writing required, students are encouraged ‘to use basic principles of communication to decide how to write their reports’ (Marshall, 1991: 6).

The majority of academics interviewed said they would like students to make definite recommendations based on the report findings. Some academics suggested that students
were reluctant to make definite recommendations because they did not have confidence in
their own findings or were not aware that the audience expected a judgement based on
their expertise. The need to make recommendations in a conclusion is closely linked with
having an understanding of the needs and requirements of the audience reading the
report. By the time they come to write their conclusion, students may be focussed on the
need to finish their report. Consequently, they may overlook the original audience for their
writing and be less likely to make specific recommendations aimed at that audience. It
suggests that students need to ask themselves ‘what does my audience want to find out
from reading this report?’ at each stage of writing.

These findings suggest that reports are a more complex form of writing than they initially
seem. The academics we interviewed stressed the need for reports to be written in a clear
and simple manner, but perhaps this emphasis on clarity disguises the complexity and
range of writing required. It may help to highlight the important difference between a report
needing to be clear and simple, and it being easy and straightforward to write. The best
reports often communicate clearly to the audience because the author has taken the
necessary time for the complex thinking and planning process involved behind the clear
writing.

Overlap between reports and dissertations
Many of the academics in our study emphasised the overlap between reports and
dissertations, especially in the sciences and social sciences. Academics viewed
dissertations as the culmination of the various research methods, experiment design, and
understanding of the subject learned during the course, often through the process of
writing reports. Although the academics we interviewed did not explicitly describe it as
such, the dissertation is one of the final chances for an undergraduate to demonstrate their
competency and initiation into the discourse community of their subject.

Academics noted that students often had trouble transferring the appropriate research
methods and skills (such as literature searches) from the reports they have written to their
final year dissertations. This is perhaps because dissertations are perceived by many
students as something large, intimidating, and ‘other’, as opposed to a logical progression
in their learning. It may also be because the modular structure of the courses separates
the dissertation in a module or unit of its own, hence isolating it from the ongoing learning process.

The difficulty in relating what has been learned from writing reports to dissertations may also be related to the earlier observation that students do not tend to ‘design’ their reports, but instead would like a fixed model to follow. However, a detailed prescriptive structure is not possible for a dissertation, as the structure evolves in conjunction with the design of the project. This is supported by observations from academics who note that students refine their title, project and chapter outline in an ongoing, integrated process. Although this is how it happens, students rarely approach it in this integrated way; it is only through experience that they come to understand how changes to the chapter outline will result in changes to the purpose of the project and vice versa. This supports Sheehan and Flood’s recommendation that ‘the report genre should be taught as a tool for invention, not merely as an organizational pattern or formula’ (1999: 24).

An interesting model for seeing reports as a means of invention and a creative process is Ashby’s ‘How to Write a Paper’ (2005) which uses the idea of a ‘concept sheet’ as a means of planning a report in a way that aids invention and design. Ashby’s concept sheet is an idea derived from engineering design in which the whole report is represented by separate blocks on a large sheet of paper, with the links between sections, figures, references, and research questions shown in colour-coded or visual form (Figure 1):

Figure 1. (Ashby, How to Write a Paper, 2005: 8.)
It acts as a more structured form of mind-map or spider diagram tailored to the needs of report writing. The visual form helps foreground the design process and the development of the report as a project, not just as a ‘write-up’ after the research is completed. It would also be useful for people whose learning styles favour graphical, diagrammatic and visual forms of communication.

**Conclusion**

The research conducted with subject academics at the University of Reading has shown that reports are a more complex academic genre than implied by their common description as simple, clear and concise writing. The formal structure of a report provides a means of conceptually ordering the research process; it is more than a series of sections and headings to follow. Students can be initiated into the research communities served by reports by being helped to understand how the structure of reports serves different functions in communicating information to the audience, rather than just being a set of requirements to fulfil. For students to negotiate the literacies required to write reports, they need to be supported in identifying the audience and purpose of their reports.

In response to these findings, we have refined our existing report writing study guides and developed a series of adaptable report writing workshops on topics ranging from identifying the audience and purpose of a report, to using graphical data. These workshops contain activities and exercises that can be tailored to the needs of individual subjects by adding examples specific to that subject. They can also be delivered as part of a generic learning development program. The workshops aim to help students understand the communication process involved in writing a report – who the report is written for, and why – as opposed to just fulfilling the formal, structural requirements. All these report writing resources can be found on the LearnHigher report writing pages. The LearnHigher CETL is also in the process of producing a series of online video resources for delivering learning development workshops and report writing features as one of these guides. This research and the resulting resources show how reports involve a more complex and varied writing process than we, and our students, may assume.
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**LearnHigher report writing resources for tutors:**
www.learnhigher.ac.uk/learningareas/reportwriting/enhancingstudentreportwriting.htm

**LearnHigher report writing video resource (part of a series of video resources on a range of learning areas):**
www.learnhigher.ac.uk/videoresources/
An award winning suite of resources which gained 3rd place in the prestigious Jorum Learning and Teaching Awards 2009.

**References**


**Author details**

Michelle Reid is a Study Adviser and Learning Development Researcher at the University of Reading. She is responsible for researching the learning area of report writing as part of the LearnHigher CETL.