

10 Writing the Project Report

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A good project deserves to be well reported yet many good students have difficulty starting to write up their work. Indeed, many experienced writers admit to having problems getting started. The report is probably the first substantial piece of writing that has been required of most undergraduate students and this, coupled with its great importance as a major contributor to the final degree, seems to create fear when having to write it. Do not worry; thousands of students conquer this fear every year and write good reports. We will dispel the fear of writing by concentrating on the elements of good preparation and good writing.

The briefing that you will have been given by tutors to prepare you for the project will contain a specification of the length of the report that you have to write. Usually, an undergraduate report is of the order of 10,000 to 12,000 words. The specification given to you may also include guidance as to the structure and layout, reference

style, use of graphics and tables and detail on the font size, spacing, title page, indexes, and binding. If you are fortunate enough to have been given such a guide, you will find it useful whilst doing your project since it effectively consists of a series of reference points on the various stages of the project. For example, the structure will normally follow the order in which the project develops from topic choice through selection and justification of research methods, data capture and discussion to conclusions.

In this chapter, you will be introduced to the report writing process. A search of a university library catalogue will reveal a substantial literature on writing and, more specifically, on report writing. It will quickly become apparent to you that there is not one standard way of writing a report. Indeed, reports are such a common way of communicating information that most organisations, including universities, have their own style guides for report writing. You may well find that each of the courses in your university will have its own report style guide. Therefore, you should make sure that you familiarise yourself with the guide for your course.

The recommendations and advice given here may seem to be very formal and disciplined. One important reason for this is that the project report tells at least two stories and you must get both of them right. The first and more obvious story is that of the research undertaken. The second is the story of the researcher. This is embedded in the quality evident in the use of the English language, grammar, syntax and vocabulary, and in how you designed and accomplished your work. The report is a communication device and is used to inform readers about the particular matter that was investigated. If the language – the basic communication mechanism – is used effectively and properly in terms of grammar, syntax and vocabulary, then there will be a greater likelihood that the readers will be well informed by the report. Add to this a well-thought-out, logical structure that leads the readers clearly and directly to what they want to know, and you will convey an impression of a researcher who is systematic and precise in all aspects of the investigation. Thus, the readers will be more likely to have confidence in the work reported.

What a report is

The definition of a report is clear from its primary purpose, which is to furnish information to one or more people who, on the basis of that information, can make a decision, form an opinion or simply become enlightened. Facts, figures, data and information are put into perspective, arguments are weighed, conclusions are drawn, and recommendations may be made in a report.

Box 10.1: Definition – Report

A formal statement of the results of an investigation, or of any matter on which definite information is required, made by some person or body instructed or required to do so.

Shorter Oxford English Dictionary

From this formal definition you will realise that you are to investigate a matter – your topic – on which definite information is required. The topic may be specified for you or you may choose and agree it after discussion with a tutor or a workplace manager. There is only one major difference between your situation and that in a business, professional or industrial concern and that is that you are being tested primarily on your project management skills and will have direct and relatively easy access to your project supervisor. In a large organisation such as a bank, media company, cosmetics manufacturer, public library, hospital, college, or government department, it is not usually possible for the decision-makers and policy formulators to see and speak to everyone who has information to communicate that could assist in their decision-making. These people must rely upon written reports, which they may have requested, for that information. For them the report is, therefore, an important communication vehicle. In such an environment, as a project manager, you will be the person responsible for seeing the project through and are not likely to have significant supervision.

Written reports form the basis for decision-making in most organisations. They also permit the creation of an archive – a recorded history of decision-making in an organisation. The reports become an important foundation for decisions about the future of, for example, a company or its products or services, departments and processes, contractual commitments, and its staff. They also become an important source of information about what decisions were made, when they were made, who made them and why they were made. Such information may be critical when contractual, regulatory or legal matters are in dispute.

With the passage of time, your project report is likely to be the only evidence, the only record that the project – your work – has been done. One implication of this is that the report will be the only public place in which you are acknowledged as the person who carried out the project. It will probably be the only way in which you feature in an organisation's memory. Therefore, the report is a crucial document; crucial to you and your professional development and image and, if you were employed during the

project period, crucial to your employer since the work was to support some aspect of decision-making in an organisation for which you worked, if only as a sandwich placement student.

Something else that you should bear in mind is that the great majority of those who read your report will know you only as a name on a title page. They will form their opinions of you on the basis of what they read in the report. If the report is clear, well written, well structured, easy to read; if the arguments are easy to follow and understand and the answers to the readers' questions are clearly evident, then the impression the readers will have of you will be good. The converse is also true. Therefore, it is worthwhile investing effort in planning the writing of the report.

The writing plan

If you are systematic in the way you prepare to write your project report, you will develop confidence in what you are doing because you will have a pattern to your work. This pattern will reflect the way in which you have conducted your research. So prepare a plan before you start writing and make sure that you stick to it. Circumstances may occur that cause you to modify the plan but you can minimize this possibility by sensible risk assessment and scheduling of the work involved, and ensuring that you have allowed enough time to complete it. Most of your tutors will have had to plan writing schedules for their own work and will have provided advice to other students, so capitalise on their experience, consult with them on writing strategies before you start writing. Always bear in mind that planning to write a substantial document such as a project report is not as simple and straightforward a process as many students think. There are significant differences between the processes that you will have used when writing your essays and term papers and those to be used in writing a report.

The writer's five questions

As the writer of a report, you should ask questions of yourself when planning it. The answers to these questions will help to inform the writing process and give you confidence in what you have done in your research. The writer should ask and answer these questions before beginning to write the report. The questions are:

- 1. Who is to read the report?**
- 2. What do the readers want to know?**
- 3. What do the readers already know?**

4. How can I add to the readers' knowledge?

5. How will the readers use the report?

1. *Who is to read the report?*

In the first instance, you and tutors from your academic department and, possibly, your work-based supervisor will read your report. Your examiners will also read it. Therefore, you may make certain positive assumptions about these readers' knowledge and understanding of the topic of your report. You have to convince yourself that you know and understand the work that you have done and that you have represented it accurately and concisely in your report, which is why you must read the finished report before any one else does. You also have to convince your tutors and examiners that you have carried out a good, acceptable piece of work and written it well in report form. Additionally, you will have to convince your examiners that you have satisfied the requirements of the course in respect of the project. You may consider that you have only to satisfy your tutors and examiners and, as appropriate, a work-based supervisor with the report. However, remember that copies of your report will be held in your academic school or department and in your university library. If your work was well done, it will probably be listed in the library catalogue, so students and staff of your university will be potential readers. It may even be made available via inter-library loan, giving it a much wider potential readership. If you did a work-based project, you will have to convince your work-based supervisor and, possibly, more senior managers about the value and usefulness of the work done. Also, in addition to being held in an organisation's information department, copies of a work-based project may be circulated throughout the organisation in which it was prepared. This means that the great majority of your potential readers will be unknown to you. You cannot make the same assumptions about the knowledge and understanding that these 'unknown readers' have as you made in respect of your tutors and examiners, only that they may not all be qualified in the subject area of your project. Thus, for most readers, your report will be a stand-alone document with the necessary demands that makes on clarity and conciseness.

When writing a report for people other than your tutors at university, an understanding of who is to read the report will enable you to judge the degree of specialisation of vocabulary that you can use and the extent to which you will have to define technical terms. Normally, it is worth finding out whether the readers for whom your report is mainly intended will be, for example, technical people seeking technical updating or advice prior to selection of processes or equipment, or financial people who may need convincing that particular services, technical facilities or equipment are worth the expenditure requested. Financial and administrative decision-makers may not have the technical expertise necessary to understand a report loaded with technical jargon.

Conversely, technical people may not have the expertise or need for understanding the financial vocabulary used in an argument for funding of, for example, a development project, but they will require the related technical argument to be set out clearly in their terms.

2. What do the readers want to know?

Your tutors will be marking your project report to determine what contribution it will make to your final degree result. They will also be expecting you to be able to use it to make useful contributions to the class discussions that you will be involved in when you study the modules that follow the project period. Therefore, they will want to be convinced that you have:

- **Worked to the project scope**
- **Reviewed the literature relevant to the topic and to potentially appropriate methodology with thoroughness and objectivity**
- **Chosen appropriate methodology and used it properly and ethically**
- **Gathered information and data objectively, and ensured its accuracy, relevance and completeness, and used it ethically**
- **Analysed the information and data objectively, appropriately and completely**
- **Worked towards achieving the aims and objectives stated**
- **Reported the work in a satisfactory way.**

If you satisfy these requirements, you will have demonstrated that you can do research and can manage a project.

The approach of work-based readers will be different. They will want to know what the work that you have been doing has contributed to the organisation, whether it is credible, and how the organisation will benefit from it. Your 'unknown readers' will have some obvious reasons for reading the report, such as the methods that you chose, why you chose them and how you used them, or the results obtained, the argument in which they are used and the conclusions drawn. If they are students, they may have an interest in the particular form, structure and style as they may be at the project stage in their courses. They may want access to your literature review and references as they may intend to work on a similar topic.

3. *What do the readers already know?*

When you are able to answer this – when working in a professional environment after graduation – you will avoid annoying the reader with material of which he or she is already aware and will ensure that your report is not excessively long. However, as an undergraduate, recognise that your tutors and examiners will be expecting to find much that they know in depth since they have the responsibility of determining from your report the extent of your knowledge of the chosen topic. They will have been chosen to supervise and assess your project because they have the relevant subject and professional knowledge. Your report will inform your tutors and examiners of your abilities as a researcher and of your potential as a project manager in embryo. You may have to convince workplace supervisors that your investigation has made a valuable contribution and that you were worth your sandwich placement. Therefore, recognise that your report may have several different purposes and target readerships and be careful to ensure that you take account of all possible readers in determining content, approach and style. Do not be unduly influenced by the opinions, sought or unsought, offered by any other potential readers of your report.

Since the main readers of your report will be the tutors and examiners, and their primary purpose in reading it will be to assess it and, therefore, you, a clear and precise understanding of what they need to know will help you to define and keep to the terms of reference of the project. These will be clear from the aims and objectives that you established for your project and from your discussion with your tutor of the assessment criteria. However, recognise that other readers may want different things, so do not forget the staff of your workplace, who may have provided the means and the environment for your work, but always keep in mind the main readers. For example, you may have done your project in a local authority department or a hospital trust. The report that you submit to the local authority chief officers' committee, or to the management board of the trust, will have a very wide range of professional and technical competence to inform. This will influence, to some extent, the way that you express your ideas and present your argument. You may have to be careful in the selection and use of technical vocabulary and, in places, may have to adopt relatively simple language in explaining certain matters because specialists are not necessarily familiar with the vocabulary of specialisms other than their own. This may mean that the report for a sandwich placement provider will have considerable differences from that for the university though there will be substantial overlap in content. In an extreme case, you may have to produce two parallel reports if the differences in demand of your course and of your workplace are very significant. For example, your workplace may not be interested in a substantial literature review or in the detailed description of the methods used and their justification, yet these are very important requirements of your university department.

4. *How can I add to the readers' knowledge?*

If you have dealt effectively with the previous three questions, then you will have good ideas on the answer to this question. The scope, aims and objectives will be strong indicators of the knowledge that you hope to gain from your research. The conclusions will suggest what you have learned. Also, remember that the structure of a report contributes substantially to the ease with which the reader can gain access to and understand the information in it. A well-structured report will lead the reader to the section that contains the knowledge of particular interest. It will also add to your tutors' and examiners' knowledge of your project management skills. In essence, your report should inform your readers of how much you know and understand about the subject of your investigation as defined by the aims and objectives and conclusions, and how much you know and understand about research and project management. Thus, it is *knowledge about you* that you will communicate to your readers rather than anything fundamentally new about the subject of your research. This is why you must regard yourself as an important reader – the first reader – of your report.

5. *How will the readers use the report?*

You may have ideas on the potential uses to which the information in your report can be put. No doubt these will be valid. However, you cannot be expected to know all possible uses. For example, your project may have been undertaken with the intention of proving the value and cost effectiveness of a particular service and recommendations in your report may include maintained or increased funding for the service. You have the impression that a decision about the service will be dependent only upon your work. However, the reality may be that your report will be discussed by a committee which is considering a dozen or more reports, each of which makes a different case for maintained or increased funding for different parts of an organisation. This is quite common in local and national government and in other large organisations. Therefore, in such a situation, your report is in competition for money from a budget which may be fixed or even declining; something that you may not have been able to take into account. It may even be the case that your project, if specified for you, was deliberately intended to provoke and test the competition for funding.

Another possibility may be that you have evaluated some equipment parts for inclusion in a product that your employer is supplying to a major customer. You have researched the complete market place without constraint. You may not be aware, for reasons of business confidentiality, that your employer has a sole supplier agreement with one particular parts' manufacturer. You may consider that this makes your work valueless but there may have been good in-house reasons for letting you go ahead with your project, not the least of which was to preserve the confidential nature, or even the existence

of the sole supplier agreement. It may be that your employer is using your research to put pressure on the sole supplier. Alternatively, your manager may be using your work to assess your potential for movement or advancement in your organisation. This is yet another way in which the realities of the workplace project provide real-life learning to the undergraduate.

This process of challenging your report will help you to anticipate questions that may be put to you or that the examiners may ask of the report when they assess it. You will be able to prepare answers before the questions are put, which will serve to put you in a more comfortable frame of mind about your work. A further benefit of the challenge process is that you will be able to prepare a commentary on the report. Prepare this as if you were going to have to speak to the report and defend it at a meeting, which you may have to do if your university includes assessment by viva.

The basic structure of a report

You have the general outline of a writing plan, what next? You have to build the report from the plan. So, now we come to the question of what the structure of the report should be. There are many structures suggested in the literature of report writing, all of which are appropriate for the situations for which they were first designed and many have subsequently proved applicable beyond their initial environment. As this is the first major report that you will have had to write, it is worth keeping to a relatively simple structure. In Box 10.2, a structure is suggested as being straightforward and easy to follow. It has been recommended and used for some 30 years, with modifications, in an undergraduate course at a UK university. It is based on the accepted idea that an academic document should have a beginning, a middle and an end. The beginning of a document should normally establish the reason for its existence and set the scene for what is to follow. The middle will contain the main substance of the document, the data and information, the ideas and theories, and the discussions in which these are employed. Finally, the end normally provides outcomes, conclusions, recommendations if requested and indications of source material. If there are substantial tables or graphical representations of data, diagrams, charts or similar displays, these should be presented in appendices, which will be included at the end of the report. In essence, these contain support for the main part of your document. It is unlikely that all these sections will be required in most undergraduate reports; different subjects may need some particular elements and not others. Some university departments may specify a more limited set of elements, for example, it is not usual to require an executive summary. However, it is a standard report element in many business organisations, including those that provide sandwich placements.

Box 10.2: A suggested structure for an undergraduate project report

*Executive summary

OVERVIEW

Title page

Acknowledgements

Abstract

BEGINNING

Contents list

List of diagrams, charts, tables, and illustrations

Introduction

Methodology

Literature review

Results

MIDDLE

Discussion

Conclusions

Recommendations

References

Bibliography

Appendices

Glossary

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END

*A business organisation may request an Executive summary.

Although each section should stand alone, there must be an overall smooth thematic development or flow of ideas from the introduction section to the conclusions section. The arches linking each section represent this symbolically in Figure 10.1, *The report structure plan*, which provides a general indication of the sections of a report, their content, and the dependencies between sections. Under each of the section headings is an indication of the type of content that should be written into it. For example, in some organisations, house style requires that the introduction section includes a summary of conclusions and recommendations. One reason for this is that a busy manager will have, together in one place, a succinct statement of what the project was designed to do and what it achieved. In such a case, it is unlikely that an executive summary would be required.

The terms in italics immediately under the conclusions and recommendations sections are intended to stress the point that these sections are entirely dependent upon what has gone before in the report. If new material is introduced into either of these sections, it will jeopardise the validity of the report since it will not have been through the intellectual processes to which the other project material has been subjected in the

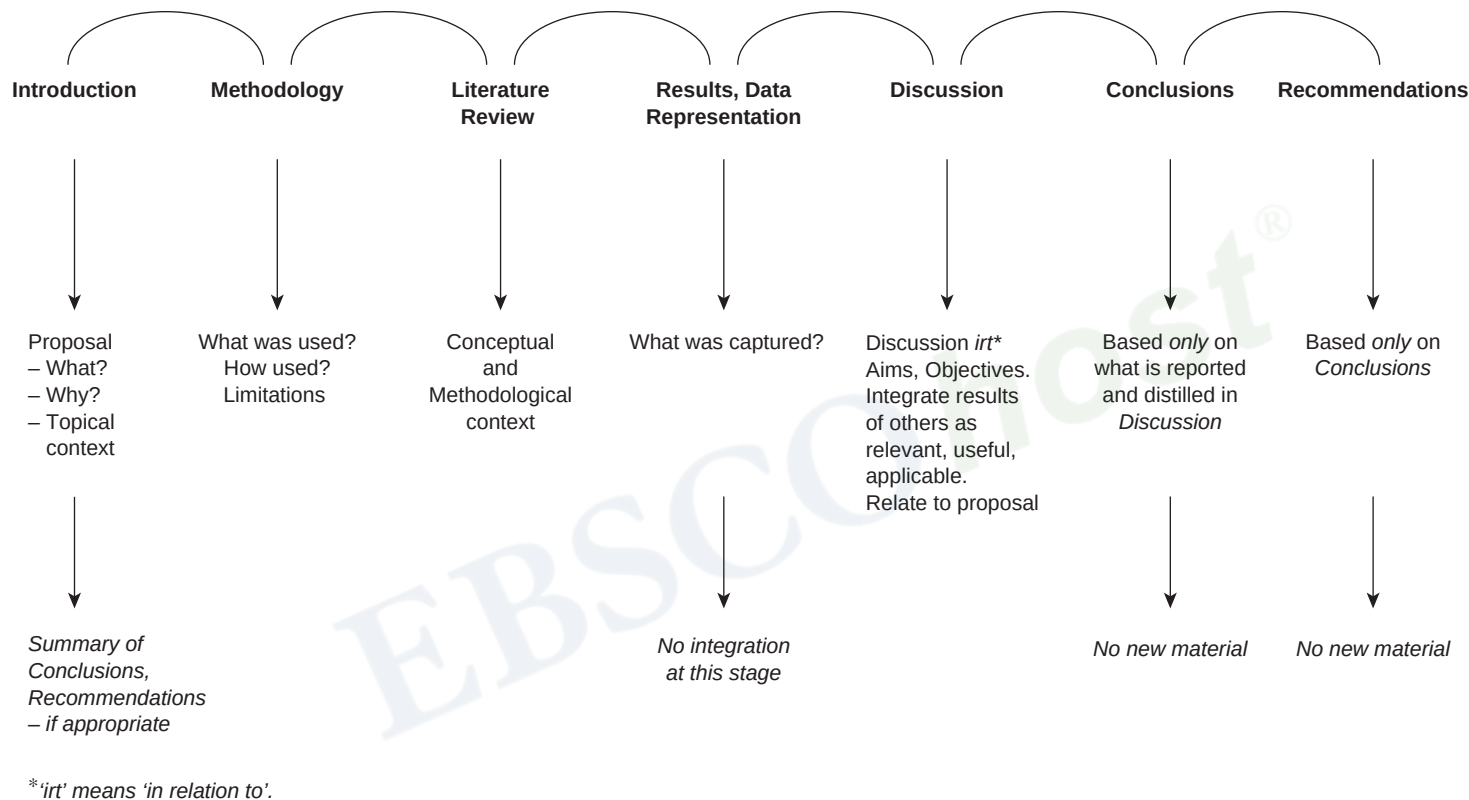


Figure 10.1 The report structure plan

discussion section. It is also possible that it will not have been produced by the selected and tested methods reported in the methodology section. It may even suggest to some readers that the researcher had a pre-determined viewpoint or conclusion before doing the research or was intending from the outset to make a particular recommendation. Such a reader would question the worth of the project as a whole.

Within this overall structure, it helps to clarify your thinking about the report if you view it as having two facets to its structure; that is, two different perspectives from which it may be viewed, the *Intellectual facet* and the *Physical facet*. The intellectual facet is concerned with the substance or content of the report. It contains the analyses, evaluations, syntheses, opinions, discussions, conclusions and recommendations that make up your work. These are what may be called the outputs of your mind. The order in which these are presented, and the logical, objective way in which you develop your argument, will also be critical outputs of the mind.

The physical facet defines the make-up of the report in terms of structure and layout, illustrations, footnotes, inserts, format, appendices, and fonts used. In essence, it is the physical image of your report. Selection of these features deserves careful consideration since readers are certain to be impressed, positively or negatively, by the initial visual impact that your report makes upon them and so the better the package the better disposed the readers may be towards your ideas. The physical and intellectual facets are integrated within a report, though the main physical features do enable the intellectual structure to be made evident if properly used.

Executive summary

It is unlikely that your course regulations will require an executive summary but, if you are doing a work-based project whilst on your course, your employer may want one. It is a summary of the salient features of the work reported and is intended to give an executive the key points, including conclusions and recommendations. Its value is particularly evident when a report is very long. Some commercial, social and governmental reports are hundreds of pages long. A busy executive does not have the time to read full reports of this length and so the executive summary has developed as an effective briefing tool on the work reported. There is no fixed relationship between report size and summary size. However, from one to four pages, 200 to 1,000 words, depending on the size, nature and substance of the report is a guide.

Title page

This is a very important part of the report. It serves as the source of details that will be used to identify your report. It will contain the title of your report – its ‘name’ – and your name

as author. Other information should include the name of your university and department, your course, the relationship of the project to the course – for example, ‘... submitted in partial fulfilment of the requirements of the BA (Hons) Business Studies’, the date of submission, the name of an employer if appropriate and a copyright statement.

Acknowledgements

People and organisations may have provided advice and guidance to you, funding and other resources for some part of your work and may have acted as ‘sounding boards’ for your ideas. It is a matter of courtesy to acknowledge the help that you have received by naming these people and organisations early in your report, often on the page following the title page, though there is no standard for this.

Abstract

What is an abstract? It is an informative statement of the essence of your report. It is not a précis, nor is it a summary, yet students often provide one or other but call it an abstract. The main purpose of the abstract is to enable readers other than your tutors and examiners to determine whether they need to read your report. It must provide a clear indication of what you did; what knowledge your work has added to the topic; what are the main ideas introduced; and what are the conclusions drawn. It should be a short, succinct and accurate piece of text, grammatically sound and smoothly presented. It can only be written after the report is complete. Do not use sentences extracted from what you may consider to be the more important sections of the report. An abstract is not the same as an extract. The abstracts in most undergraduate reports are between 150 and 300 words presented in one paragraph. Longer abstracts would be unusual.

An abstract is a work of scholarship in its own right and so, to ensure that your abstract is well constructed, examine some publications and databases that contain abstracts. Familiarise yourself with abstracts so that what you write conforms to what readers will expect. In particular, consult abstracts sources that state that they provide informative abstracts. It is this type of abstract that you should write. An informative abstract contains core content of an item, such as results and conclusions, whereas an indicative abstract consists of pointers to what will be found in the report; for example, the reader has to read the item to find what the results and conclusions are.

Contents list

You must provide a list of the contents of your report. This list will provide your readers with an outline of the main sections of the report, leading through them in a logical

manner. The sections listed will enable them to identify where they might find their questions answered by directing them to the page on which each element of the report starts. Make sure that the chapter and section headings on the list correspond exactly with the corresponding heading in the text. The title page, abstract and contents list may be regarded as 'approach elements' to what you have done in that they provide a lead in to the report.

List of diagrams, tables, charts, and illustrations

Undergraduate research usually produces data and information that may be presented in graphical and/or tabular form. Often, tutors will suggest topics that will inevitably result in useful amounts of data being produced as they may wish to determine the extent to which the students have mastered the techniques of gathering, analysing and presenting data. Thus, projects often contain figures and tables that have been provided to help the reader to accept the relationships or trends, for example, which the student has identified. Tables can also help to clarify or emphasise comparisons that the student has drawn from data and information gathered, either from experiments or from the reported work of others, or both. The figures and tables play an important role in clarifying the results and the student's thoughts presented in the discussion section. A table of data or a graphical image of a perceived trend or relationship may be more easily understood than the 200 or more words that may be needed to explain the same thing in the absence of the table or figure.

Box 10.3: Some simple rules when using diagrams, tables, charts, and illustrations

Keep them as simple as possible and in perspective in terms of size, number and sophistication. Tutors have been known to describe complex, beautifully drawn, multi-coloured graphics adorned with esoteric symbols as immaculate rubbish.

Do not break up text excessively with illustrations. Put those essential to a specific point in the most logical and convenient place in the main text, put large ones in appendices or, if you are convinced that they belong in the text, put them on pages facing the relevant text. Recognise that an illustration within the text almost inevitably interrupts the smoothness of reading and so its location and the extent of its intrusion should be carefully assessed. This is not a case for never locating an illustration within the text, it is a case for care in choosing the location and determining exactly how the illustration is displayed at that location. Does it illuminate a specific matter at that point? Conversely, does it do little more than break the reader's train of thought?

Ensure consistency in style, numbering, and legends.

Introduction

You will be expected to provide a definition of the subject of the report, state the scope, aims, objectives and terms of reference, and provide the background that leads to the report being prepared. Also, it is useful to summarise a long report and outline its structure. If the subject is technical, it is helpful to define unusual terms and phrases. In essence, the introduction sets the scene for the reader.

Methodology

The methods you chose and how you used them must be spelled out in detail. Among other things, this is to enable others to replicate your work using only what you have reported. Replication of research work is not so common in the arts and humanities as it is in science and technology, for example. However, if you follow the tradition of clearly and precisely setting out research methods, you will enable readers, including your tutors and examiners, to assess the quality and validity of your research practice. Research methods are considered in Chapter 7.

Literature review

You will provide the authoritative foundation upon which your project is built by reviewing all pertinent documentation, internal and external, that you have captured in your literature searches. The literature review is explained and discussed in detail in Chapter 8. It is important for two main reasons. First, because it is from your preliminary search and review of the literature that you will develop understanding of the topic or even find your topic. The literature review will also provide you with the methods of research and, probably, with techniques of analysis and synthesis applicable to your results, and with other skills and knowledge needed to do your research. In other words, it will help you with your preparation as well as with the core research. Thus, the literature review is important because it enables you to prepare for your research and it is also one of the most important research methods available for your core research. In fulfilling this major role, it belongs in the *MIDDLE* section of the report. This bridging effect of the literature review emphasises how important it is for you to know and understand what has been published on your chosen topic.

Results

Conventions vary as to what precisely should be included in this section. Some project guides require inclusion of the results and discussion of them in this section. The recommendation here is to present only the results without offering opinions about them or discussion of them. If the results are very substantial in terms of the size and

number of tables of data, charts, drawings or similar illustrations, it may be advisable to place these in appendices, and include summary tables in the main text, making references to the main results tables and other illustrations. This will enable you to avoid fragmenting text with large graphical interruptions since that could make it difficult for readers to follow your arguments.

Discussion

This is the place where you demonstrate very clearly your intellectual capabilities, your critical, analytical and synthetical thinking and objectivity, and where you move strongly away from description. Here, you will consider issues and problems that have been identified and examined in your investigation and for which you propose answers or show that answers are not possible or feasible. Note that a discussion is an examination by argument and an argument is a reasoning process in which evidence gathered is evaluated objectively in order to determine the extent to which the aims and objectives of the research have been achieved. Bear in mind that, in addition to using the data and information that you have captured by doing your research, you should include information and data that you have gathered from the literature that you reviewed, provided that it is relevant and appropriate. It is evidence. Such inclusions may significantly strengthen your argument or enable you to challenge, even refute arguments that you have discovered in the literature. They may enable you to make deductions or draw inferences that were previously not possible due to insufficient evidence.

Conclusions

This is, for many readers, the most influential part of the report. It is very often here that the greatest impact is made. Therefore, it is important to ensure that your conclusions are credible. You will do this by making sure that your conclusions draw logically and objectively and only on the evidence, arguments and facts presented earlier in the report, and are not excessive in number; sometimes it may be that there are very few conclusions that may logically be drawn. Use simple, direct language, and itemise the conclusions – it helps in scanning. Do not introduce new evidence or arguments.

Recommendations

These are not always required. Normally, you should only provide them if they are asked for, or if they flow naturally and obviously from conclusions. They should follow logically and only from the conclusions, stating what should or should not be done, what is or is not so, and should be brief, direct and clearly set out. Itemise them in an order that corresponds to the order of conclusions. Do not introduce new material or arguments.

References

These are the items that you have used and from which you have obtained and used information useful to your research. They must include all documentation, both that which is internal to your workplace or university and that which is external but possibly not published. Include in this list appropriate entries for all sources that you have consulted and which have aided your work. These sources may include journal articles, conference papers, books, newspapers, lecture notes and handouts, correspondence, conversations, advertisements, and electronic sources such as emails, electronic journals and items on the Internet. Also include non-textual items such as films, audiotapes and videotapes, maps, and paintings. In some subject areas, realia such as models, globes, sculptures and equipment may have been used as sources of information and so should be entered. How do you describe the sources? There are many authoritative guides to citing practice for all media forms. First, consult with your tutor as your university department may issue a referencing standard to which you are required to conform. Make sure that the guide that you use is current. The latest guides include practice for citing electronic sources, including Internet sources.

Bibliography

What is a bibliography and how does it differ from the references? In the sense in which the word is used here, a bibliography is a list of items devoted to a particular subject, in this case, perhaps slightly more broadly defined, but including the topic of your research as presented in your report. It is intended to provide a systematic and an authoritative listing of the material, including non-textual material, that covers the subject. It will include the items that you have entered in the list of references. Additionally, it will include other items that are significantly informative of the topic and which you used for general awareness and acquiring background knowledge on your topic. State of the art reviews, reviews of recent research, theories or developments, advanced treatises and general texts are some of the items that may be included.

Appendices

Your course regulations may specify that you present illustrations that occupy more than a small proportion of a page in appendices. Include copies of questionnaires, interview schedules and scripts, pertinent correspondence and extensive calculations, unless the calculations are a special focus of your research. You may also find it useful to include clear, objective notes made in tutorials in which you explored matters that had a significant influence on some part of your research. Make sure that your tutor agrees with the substance of such notes.

Glossary

A glossary is a list, with explanations, of uncommon and 'technical' or subject specific terms that you have used in your report. Your topic is mainly either academic or professional in nature and so you will have used terms from the vocabulary particular to your subject. Some of your readers may not be sufficiently familiar with your subject to know some of the terms. If it is likely that this will be so, then you should include a glossary.

Index

It is rare for an undergraduate project to have an index but some university schools or departments may require the inclusion of one. An index is a pointer to the locations in the text of particular words and terms such as subject concept terms, methods, theories, and names. If you have to construct an index, be aware that some terms have more than one meaning. Therefore, when selecting entries for the index, make sure that you understand the meaning that each entry has at its location or locations in your report. It is this meaning that you should have in mind when making the entry. The entries in the index are usually arranged alphabetically. Before you begin to construct the index, examine the indexes in three or four textbooks. 'Chase' a few topics in these books to determine how the indexes 'work'. How are entries made for terms that appear in several locations in the book? How are unusual terms dealt with? Has the indexer given a brief explanatory note to clarify such terms for the reader? You do not have to index every term in the report. Ask yourself what your readers might want to find of a specific nature in the report. This will help you to choose index terms.

The readers' five questions – and where they are answered

You now have the basic structure that you are going to use for your report and are aware of what should be written in each section. Readers of the report will have certain expectations of it. What are these expectations and how can you anticipate them? Most of those who have an active, decision-making interest in your research will have five questions that they may address to your report. Some of the readers may have only one or two of these questions. A properly structured report will guide the readers to the sections containing the answers to these questions.

1. *What is the problem, circumstance, or situation addressed?*

Answered in:	Title
	Introduction – terms of reference
	Summary – if provided.

2. How was the matter studied?

Answered in: Methodology section.

3. What information, data were obtained?

Answered in: Results section, and Appendices if included.

4. What interpretations, comments, and evaluations are made?

Answered in: Discussion section
Conclusions section.

5. What action is recommended?

Answered in: Recommendations section.

The three writing stages

One simple and helpful writing strategy is based upon the view that writing a report is a three-stage process – pre-writing, writing and post-writing. With the help of your tutor, select two or three reports prepared by students in previous years of your course. They should be reports that achieved good grades. Read these and discuss them with your tutor so that you are able to identify the sort of features that justified the good grades.

Pre-writing

It is in this stage that you define the purpose of the report, clearly establishing what it is that you want to achieve in writing it. You will have in mind that you want to explain precisely what it is that you have researched, why and how you researched it, and what the outcomes were. You will want to ensure that everything is so clearly, logically and systematically presented that all readers will be informed as to exactly what you have done, no more and no less. You should then write down your findings, notes about the information that you have captured from the literature and of opinions formed in discussions with your tutor, and organise them systematically to reflect the way in which you wish to develop your argument.

An important aid to this is the project proposal that was approved by your tutors, in which you will have systematically presented the project scope, aims and objectives and the justification for doing the research. Thus, you will have an important reference or benchmark against which you will be able to write your report. If you have adhered to the terms of your proposal, then you will automatically have a very good set of guides

for use in composing the individual sections of your report (see Appendix 6 *Relationship of the Project Proposal to the Project Report*).

Box 10.4: Copyright

You have a scholarly duty to acknowledge all sources from which you have taken ideas to help with your project. There is nothing wrong with using such ideas so that you can, for instance, justify a certain procedure or explain a certain phenomenon. Almost all research work today builds on the work of others by using, for example, known methods or results. Remember to pay the intellectual debt that you owe to your sources; pay by attribution. If you use photocopies, diagrams, tables, charts or similar which you have taken from other sources, you should get the permission of the publishers or copyright holders and should certainly acknowledge all sources appropriately.

Writing

At this stage, you will have information from the literature review, from the investigation and from your discussions with your tutor and so will be formulating your ideas for discussion of the results. You should now begin to feed all this information into the appropriate sections of the report. Do not try to draft the whole report at one sitting. Indeed, you will quickly realise that it is too soon to draw conclusions and formulate recommendations. These should be left until you are writing the final draft, though there is nothing wrong with making notes of some tentative conclusions, but do not mentally commit yourself to them.

You will now realise how useful a properly structured project proposal is when you begin writing, and will find it a great help to have your writing governed by the sectional nature of the report. Be absolutely clear in your mind that what you write as a first draft is not going to be the final report. In the normal course of events, you will have several attempts at writing the report; perhaps some sections will require more attempts than others. It is very likely that you will write several drafts of the discussion section before you are completely satisfied with it. Never be satisfied with the first attempt at any section, no matter how in tune you are with your research and with the arguments that you wish to deploy.

Thus, the writing of your report is a lengthy process and this is why you are recommended to begin the writing up as soon as possible and to leave yourself several weeks at the end of the project period to complete the drafting. For example, writing of the

introduction, in which you will present the scope, aims, objectives and justification, can begin very soon after the project has been approved. Similarly, you can begin the writing of the literature review section once you have started to capture and analyse the available literature. This will necessarily require progressive updating during the project but the bulk of it will be completed before the final writing up period. The section devoted to methodology can also be started early in the project period since you cannot start your research until you have settled on the methods that you are going to use.

First draft

When you start thinking about the first draft, use the recommended report structure to prepare an outline. It is logical, systematic, organised and differentiating of the ideas that you now have to use in writing your report. Whether you use the recommended structure or some other that you have provisionally agreed with your tutor, start drafting immediately. This is sensible as, in settling on a structure, however provisional, you will have begun to decide what should be written in each section of your report. Thus, you will allocate content; in some cases no more than a few short indicative sentences, in others substantial paragraphs.

At this time, do not worry excessively about matters such as grammar, syntax, spelling or even order of ideas. You will deal with these in later drafts. It is the ideas that you need to record. Put the draft aside for two or three days, during which time your thoughts will settle and your reading and thinking about the topic will develop further. At the end of this time, edit the draft. Reconsider the content and the overall structure. It is unlikely that you will be satisfied with what you have written. Your thoughts may vary from contemplation of a complete rethink and starting again with a blank sheet of paper to barely tinkering with anything. Both these extremes are bad strategies. Yet neither is an unusual state of mind to be in at this stage and does not suggest that you are not suited to project work or that you cannot write a report. If you really are unable to move forward, consult with your tutor, who will almost certainly have faced many students in identical situations. You are doing the project to learn and the tutor is allocated to you to guide you in that learning.

Second and subsequent drafts

When you have edited the first draft, again leave it for a few days. In that time, you will have further developed your understanding about writing, analysed more data and information, adding to what you know and so will be able to prepare a second, revised and extended draft, possible adding more detail to some sections and introducing content to others. Leave this draft as you did the first draft. Repeat this revising and leaving process until you are satisfied that you have incorporated into your report all

that you consider necessary to tell the complete story of your research and to fulfil course regulations. This may mean that you write several drafts, may be as many as seven or eight versions of some sections. This is normal and will usually result in you having increasing confidence in your writing.

Final draft

You have now written the final draft of your report. Subject only to the discovery of significant errors or omissions or the failure to meet stylistic or administrative requirements, you are almost ready to submit the report to your tutor. The key word here is *almost*. You have four important things still to do. First, you must check the draft against the project proposal to make sure that you have met the aims and objectives or have included explanations as to why you may not have met some of them. Second, you must check it against the requirements prescribed in the course regulations. The third and fourth things that you have to do are to edit the draft and to sub-edit the draft. These are two distinct processes so do them separately even though you may perceive a slight overlap between them, which is not a problem.

Editing is mainly directed at checking the content to ensure that it is of the right quality in academic and intellectual terms. This is the last opportunity to check the accuracy of facts and figures – text and graphics, and formulae, and logic of arguments. Do not tinker but work through the report systematically and objectively. Sub-editing is concerned with the quality of administrative technicalities such as spelling, vocabulary, syntactical and grammatical errors, accuracy of referencing, and typing and layout errors.

The final draft is also the last opportunity for you to proof-read for plagiarism. Plagiarism is defined as representing any idea or work of another as your own knowingly or when you ought reasonably to have known, and has been discussed in Chapter 1. A precaution that you can take is to develop the practice of always documenting the source of every idea, even yourself as a source, at the time that you obtain or have that idea. Your university will have a code of practice in which the penalties for plagiarism are spelled out. They will be severe.

Post-writing

Now you can finally settle your mind and establish confidence in the work that you have done. Leave the final draft for a few days so that you can become somewhat distanced from it, at least in time. Then, as far as you possibly can, read it as if somebody else had written it. When you have read it, attack it. Examine the way in which you have written every element of the report. Challenge each element in turn from both

the clarity of writing of it and from the validity of its content as you have presented it. Do you now accept your choice of topic and your definition of it? Does your justification of it stand close examination in the sense that your argument for it as a piece of worthwhile work stands up to challenge? Do the scope, aims and objectives successfully meet your challenge in the sense that you have so clearly and unequivocally met and explained them that they are completely acceptable and supported by the outcomes? Remember that, at this stage, you are concerned with how persuasive your writing of these elements is, in other words, how good the argument is that you present in your report equally as much as the quality of the academic content.

Some style features

During the making of your report, it is important that you pay close attention to your writing style. Why should you do so? Remember that the first contact that most readers of your report may have with you is your report. If your project is work-based, these readers may include senior management in your organisation, and possibly potential employers. Therefore, it is in your best interest to ensure that it is of a high quality. The quality will depend not only on the content or even the choice and use of the methods but also on the way that you present what you have done. Style is an important feature in achieving the necessary standard of presentation. Good style can add to the persuasiveness of your report. Some style elements are considered below.

Accuracy, brevity and clarity

These are the ABC of report writing and together with simplicity, are major contributors to gaining and holding the attention of readers. Therefore, avoid word redundancy, and sentence and paragraph complexity. Readers are busy people. To them, time is critical. Repetition in a report adds time and possible confusion in reading and will be a cause of loss of brevity and clarity and of the attention of your readers; avoid it.

When you begin to write your report, you should be full of ideas and will not want to forget them as the writing progresses. One result of this is that you will write in rather long and complex sentences, possibly using too many words to express many of your thoughts and opinions. When you return to what you have written, you will be faced with a morass of words. You have been wordy, somewhat unstructured and grammatically unsound and repetitive. Do not worry. This is quite common and is easily corrected. It was important that you got your ideas down on paper to avoid losing them.

Now you can begin to refine these ideas. Correct your grammar. Check the words that you have used to express certain ideas. Are they long and technical and could you

replace at least some of them with shorter, more commonly used words? Have you created long and complex sentences that contain several clauses and that require much effort and time to work out precisely what they mean? Is there intricacy and complexity where simplicity and clarity would be much more valuable? One way to test this is to read your text aloud. Is it easy to read with ease and to create the necessary flow and emphases that should convey the sense of what is written?

An interesting way to check the readability of your report is to calculate the Fog Index. Take a sample of your work, count the number of words and sentences in it and work out the average length of a sentence. Now count the number of words longer than two syllables. Work out what percentage they are of the total number of words. Add together the average sentence length and the percentage figure of the longer words and multiply by 0.4 to obtain the Fog Index for the sample. The value of the Fog Index for this paragraph is 10.4. The ideal Fog Index is said to be 7 or 8 and any writing with a figure above 12 is considered to be a difficult read. The method of calculation seems odd and illogical yet it does provide a relatively crude guide to clarity.

Do not be persuaded that your report is too complex and difficult to understand if your Fog Index values are nearer to 12 for samples of your work. Most project topics are professional or academic in nature and such subjects have their own specialised vocabulary. Many professional and technical terms are multi-syllabic. Some parts of your report may require quite intense discussion that calls into play many specialised terms. This will result in some sentences and paragraphs being very rich in specialist vocabulary and occasionally quite long, leading to high Fog Index values.

Continuity, flow and uniformity

Do not borrow the words of others. It is usually easy for the reader to see the joins when a writer has imported parts of another author's document. Also, relying closely on words from the text of some of your documentary sources may open you to the accusation of plagiarism, even though it may be unintentional. Your readers will not know that it is unintentional.

Colloquialisms and clichés

Try to avoid using these. We use colloquialisms and clichés frequently in everyday conversations. We understand them and they often act as a condensed form of speech. There is no harm in this because our conversations are with people who are in direct contact with us and we can usually clarify any misunderstandings that may arise from their use. However, they are junk language and usually lacking in the precision needed in a report. Something that has begun to appear in GCSE schoolwork is the use of

‘texting language’ with its accompanying abbreviated spelling. Some students use this automatically. Do not use it. It is a form of colloquial language that has developed for economic reasons.

Impersonality and formality

Use a formal, impersonal style. A report is a formal document and, as such, should be free of the use of personal pronouns and of loose and informal expressions however acceptable they may be in conversation. The main focus of your report is its subject not its author. The only occasions on which the personal form is acceptable are when it occurs in a quotation that is being used, when specific instructions or directions given by people named in the report are reported verbatim, or where the focus of your research is or includes people as individuals.

Technical and complex terminology

The vocabulary of a specialist subject has been developed to enable those involved in the subject to express their ideas succinctly and clearly and so it is essential. However, it is possible to fall into a trap of your own making by using jargon for the sake of impressing. Exercise care in the choice of terminology, use a thesaurus and a dictionary to check terms, and use common sense. Use a subject specific thesaurus and dictionary to check terms when the topic of your research is relatively intense academically, professionally, technically or scientifically.

Grammar

Much written work is devalued, even debased, because of lack of attention to grammar and much student work is subjected to substantial criticism due to poor grammar. It has become apparent over the past 30 years or so, that many students lack detailed knowledge of English grammar. However, you should realise that there is a significant advantage to be gained from adhering to many of the rules of grammar. Good grammar and clarity of expression of ideas go hand in hand. It is not suggested here that you should use the rules of grammar with utmost rigidity. Slavish conformity could, itself, lead to loss of clarity. Good reference sources to use are *Fowler's Modern English Usage*, *The Oxford Guide to the English Language*, and *Brush Up Your Grammar*, by Michael Cullup (1999).

Over-qualifying

Beware the adjective and adverb rush. It is fairly common for students to qualify a particular noun with several adjectives or a particular verb with several adverbs. This

can lead to difficulties for the reader since it may take several readings to grasp the point being made. For example, 'knowledge management is the most important, significant and critical process in preserving the market position, profitability and innovative capabilities of British companies in the rapidly developing and changing, increasingly competitive global market place' could be clarified by breaking it down into two or three sentences. The ideas in the following sentence could usefully be presented in two or three sentences, each of which should include explanations of the reasons why the behaviour was reprehensible: 'The researcher worker's behaviour was morally, ethically, socially, psychological and professionally reprehensible'.

Litotes

This is the expression of an affirmative by the negative of its contrary, for example, *not inconsiderable*, *not unindustrious*. Be sparing with these and, preferably, do not use them. They can be striking if used rarely but become affected and troublesome if used frequently. They have featured in students' reports, perhaps in attempts to 'tone down' criticism.

Blandness

Do not be bland, facile, evasive or non-committal. If you have something to report, report it objectively. Do not be afraid to be direct, to get to the point, to commit yourself on paper. If you have results that suggest something controversial, do not be afraid to report them. However, make sure that you check and recheck these results before reporting them. On the other hand, if there is nothing to report about an aspect of your investigation, then state this so that your reader is not left uncertain about what you may have discovered during your research.

Exaggeration

Do not exaggerate. Exaggeration devalues a report. Too frequent use of emphasis – such as superlatives and extreme forms of description – reduce the impact of what you wish to communicate. In everyday conversation, we often hear the words *brilliant*, *marvellous*, *outstanding* and *excellent* to describe circumstances, performances, events or occurrences that a generation ago would have been regarded as quite ordinary or even mundane. It is not unusual to find over-qualification and exaggeration together. The following was encountered in a student report: *It was a brilliant, excellent and quite outstanding piece of work*. This sort of excessive emphasis devalues the work being reported. If you emphasise everything that stands out, how can you make an impact on the reader?

Generalisation

Do not generalise from the particular without very good justification for doing so. Generalisations must have firm foundations in fact and you must be able to show how they are developed from data or information gathered in your research. Always make sure that you have sufficient evidence to support your generalisations. The arguments you use to justify them must be logical and systematic and will rely on that evidence.

Control opinions and influences

Do not state opinions as facts. Do not present assertions as facts. Just because you declare that something is so does not make it so, however strong your declaration. If you think that a statement you have made is an assertion, ask yourself the question: *What is the evidence for it?* Make sure that there is evidence and that it is strong enough to stand up to challenge.

Influence may become evident as bias. You may be biased because of the extent and depth to which you know your subject and your commitment to it. Influence may result from pressure exerted by people interested in your research. Time limitations imposed upon your work may unintentionally bias the results, for example, because reduced time for data collection means that your sample sizes may be too small for meaningful analysis. It may be that, to meet the time constraints, you have been 'carefully selective' of samples, choosing instances that are easily accessed, readily to hand or simple to process. Your objectivity must extend to control of your opinions and of the influences on your work and their potential effects. You may find this difficult in circumstances in which your tutor or workplace supervisor has a strong personality and has very determined views on the topic that you are investigating. This may result, for example, in unintentional bias creeping into your work because your analyses and interpretations of your results are 'force fed' by someone else. Remember that the project is yours and, no matter how strong the opinions of your tutor or supervisor, they can be wrong and are if they instruct rather than advise or guide. You have done the work, you are closer to it than they and you are entitled to present your opinion in your report, but you must be able to justify your position.

Some technicalities of report writing

You are responsible for the content of your report and for its preparation as an information vehicle. There are some points of an administrative significance that you must keep in mind when writing the report since they will contribute to the credibility and information value of the report. They will help to put a good finish to it.

Confidentiality

Make sure that information you intend to include in your report and that you have gathered within or without your organisation is not confidential and so you are prevented from using it. This applies to information that you generate in the project as well as to information that you may have extracted from internal documentation or received in conversation. If in doubt about any information or data, check with responsible people. You must clear all information with an authorised person before publishing it in your report. For example, if you have done a work-based project, the information and data that you generate or accumulate and reorganise in the project will normally be the intellectual property of your employing organisation and so it will be the right of that employer to determine the level of confidentiality attaching to that part of the content, and the use you may make of it in your report.

Checking

You must ensure that any facts such as quantities, figures, formulae, and the names of people, places, events, products, materials, or services that you have included are accurately and correctly presented. Always check and recheck; it may seem to be a chore but it is a very significant quality factor. You owe it to yourself and to all those who have been involved in your research in some way, to be precise and correct as far as is possible in what you report.

Editing

Edit every *sentence* and every *paragraph* to ensure that your meaning is clear; do not just read for overall sense. Check the flow of ideas from sentence to sentence and from paragraph to paragraph. Ensure that there is a logical development from one section of your report to the next. If you have word processed your report and have cut and pasted parts of the text to reshape one or more sections, you may have introduced some oddities of expression. Be sure to examine such parts of the text even more closely. Compare what you have written with what your stated intention was that you set out in the project proposal.

Proofing

Proof-reading is not easy but it is an essential process in your project work. It requires time and care. In the extreme, it may mean the difference between success and failure of your project. A good proof-reader will spot errors in layout, typography, page and section numbering and labelling, and word forms, poor relationships between diagrams

and text, inconsistencies in diagram legends, and even errors of fact. Get someone else to proof-read the final draft with you. You may be too close to your report to spot obvious errors of fact, transcription, representation or spelling or even something as simple yet blatant as the repetition of common words – ‘the’, ‘if’ and ‘of’ often being doubled. Bearing in mind what can happen at this stage when making corrections and revisions, it is essential to leave good time for writing and editing the report. However, resist the temptation to tinker. It can be disastrous. It is sensible to rethink the golden phrases that you coined to express certain ideas, but beware of changing for the sake of changing.

Spelling

Use an English dictionary such as *The Shorter Oxford English Dictionary*. Use spell checkers carefully – some have North American spelling. If in doubt, always check and remember that dictionaries usually give more than one meaning to many words, so be sure that you examine all alternatives when checking. Remember that a spell check does not inform you whether a word that you have chosen is the correct one to use in a particular context.

Choice of word

Get your vocabulary correct. Using the wrong word in a particular context may result in a loss of accuracy, even offence. Consider the difference between the following:

He was an inept choice for the job.

He was an inapt choice for the job.

This is quite a simple example but the level of offence that the first observation offers to at least one person – the one who made the choice – is substantial. Another example of a word that is being used incorrectly more often now a days is ‘less’. Even some reporters for the BBC have been heard to refer to ‘less people’ in particular contexts, for example, ‘less pupils are taking languages at A-level’. ‘Less’ is a ‘mass’ noun and is incorrect for the context. The correct word is ‘fewer’, which is a ‘count’ noun. A good English dictionary used in conjunction with a good English thesaurus will help you to avoid poor choice of words.

Structure

It is worth reiterating the importance of structure. Good, well-written, well-structured, well-presented reports will attract attention and will promote a good image of the writer. A well-structured report will lead your readers systematically through your

investigation from inception to completion, answering any questions that they may have as they read. Conversely, badly structured, badly written reports will promote a bad image and will cause the reader to lose interest in the work.

Summary

Now that you have read this chapter, you will understand why you should prepare to write your report. Preparation is a key process; the better the preparation the better the report is likely to be. You will be able to plan your writing in detail, recognising the significance of the proper use of language and of structure in the making of your project report. Much is involved in writing your report and so the chapter begins with a definition of what a report is and its purposes are explained. In knowing your readers, you will be able to determine precisely what is necessary to answer the writer's and readers' questions and so choose a structure and develop content suitable to report your work. You now know how important and how easy it is to maintain quality control of your writing. Ensure that you have access to reference works such as an English dictionary, a general English language thesaurus, and an appropriate subject-specific dictionary and specialist thesaurus. Also, sensible use of books on style and quality of English will help to ensure that your grammar, writing style and vocabulary are of a reasonable standard. An authoritative guide to citing information sources should be kept readily to hand because information is available in so many different formats. Finally, you are the author and you are the editor and sub-editor of your report. These are responsible 'posts' and you must take them seriously. Editing and sub-editing are the last opportunities for you to ensure a good report.

Further Reading

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