

# **A Report on Report Writing**

## **An Example**

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## **Preface**

This report about report writing was written from my positions as a consultant, coach and trainer and as a teacher in Higher Education.

A Matrioshka doll from Gorki inspired me to the concept of this book. Like the principle of the six dolls within a doll, you find in this report several layers of information about another report, namely the one you have to produce yourself.

Both presentation and contents of this report are informative. The enclosed computer disk contains a complete framework with hints and suggestions. On the disk you can produce your own report; when you print the report the hints and suggestions do not appear on paper.

This practical guide aims at students and business people alike, in fact at everyone who has to produce an effective report with a professional appearance.

Finally, I would like to acknowledge that this report could not have been written without valuable suggestions from colleagues and students, nor without positive criticism from the industry. I am especially indebted to Mrs. Drs. Roel Dik for his detailed comments.

Rotterdam, January 2015.

[Contents](#)

## Table of contents

<a href="#">Summary</a>	4
<a href="#">Explanation of terms / List of symbols</a>	5
1 <a href="#">Introduction</a>	7
2 <a href="#">Planning a professional report</a>	8
2.1 Filling in the Introduction	8
2.2 Filling in the chapter Method	8
2.3 Filling in the chapter Results	10
2.4 Filling in the Conclusions and Recommendations	10
3 <a href="#">Presentation</a>	11
3.1 Typography	11
3.2 Tables and graphs	12
3.3 Quotations	15
3.4 Notes	15
4 <a href="#">Use of language</a>	17
4.1 Formulation: clear, concise and complete	17
4.2 Spelling	18
4.3 Punctuation	18
5 <a href="#">Conclusions / Recommendations</a>	20
<a href="#">Bibliography</a>	21
Appendix I <a href="#">Fixed structures</a>	26
Appendix II <a href="#">Grammar and report writing</a>	27

## Summary

This report deals with the techniques of report writing.

The following chapters cover relevant aspects of writing reports such as:

- the planning of a professional report on the basis of method, results, and conclusions;
- the presentation, which includes typography, graphs, tables, quotations and notes;
- use of language such as concrete and concise formulation, spelling and punctuation.

The conclusions drawn are that writing reports can be learned by everybody and that form and contents are invariably linked and strongly influence each other. A condition for a successful result is a systematic working method.

A thorough report as far as subject matter is concerned, but which looks poorly does not come across and is probably hardly read at all. A sloppy report full of stylistic and spelling mistakes is taken a lot less seriously.

A report with a slightly weaker contents can be improved by adhering to form features. Thinking systematically about what you have written has an enhancing effect.

[Contents](#)

## Explanation of terms/List of symbols

(In this report a list of terms and symbols serves no purposeful meaning and can therefore be left out. However, I have provided an example of each list to give you an idea of their appearance in a report.)

### Explanation of terms:

absorption spectrum	An electromagnetic spectrum in which the intensity distribution of the original radiation has been characteristically modified by its passage through a selectively absorbing substance.
cathode-ray tube	A vacuum tube in which cathode rays produce a luminous spot or line as they are projected on a fluorescent screen at one end of the tube.
EPR	Electron Paramagnetic Resonance.
heterojunction	A combination of several types of semiconductor.
nimonic	An alloy used in high temperature situations.
peptides	Substances resulting from the breakdown of proteins.
transducer	A device for transferring power.
Wire gauge	A gauge for measuring the diameter of wire on the thickness of sheet metal.

[Contents](#)

**List of symbols:**

Symbol:	Meaning:	Unit:
-----		
a	Acceleration	m/s <sup>2</sup>
A	Area	m <sup>2</sup>
E	Energy	J
f	Frequency	Hz
F	Force	N
M	Torque	Nm
P	Power	W
V	Velocity	m/s
$\alpha$	Starting acceleration	
$\sigma$	Dynamic viscosity	
$\tau$	Magnetic flux	

[Contents](#)

## **1 Introduction**

The fact that improving your expertise in the area of report writing can be advantageous need not be argued. Take for example the importance of a well written technical report, graduation paper or business report.

Optimal conveyance of information while at the same time leaving behind an impressive calling card is in essence equally important to the author as to the reader or the organisation where the report will be utilized.

This report deals with the relevant aspects of report writing. Explained is how step by step a professional report is produced that meets the requirements on both contents and presentation.

The nucleus of this report on report writing treats a step by step procedure of the construction of an accountable and logical piece of work. Also presentation questions like typography and the processing of tables and graphics are dealt with. The final chapter on language use discusses matters such as proper formulation, spelling and punctuation.

[Contents](#)

## 2 Planning a professional report

In the user's guide of this report you have been advised to construct all parts of your report simultaneously using the framework on the computer disk as a starting point.

It goes without saying that there is more to creating the body (introduction, chapters and conclusion) of a report in a sensible manner. The hints and suggestions with the introduction do support you in thinking about the contents, but to arrive at a good report more help is needed.

In the ensuing paragraphs you will find information about filling in the most important parts of the report: the introduction, the paragraphs and the conclusions and recommendations.

### 2.1 Filling in the Introduction

Obviously you start by formulating the subject or problem. Following logically from this is the purpose of your report. You indicate why the problem is chosen and what the importance of it is. Doing so will place the problem in a logical and motivated context.

Define the scope of your report by means of logical arguments. There should be no doubt in your reader's mind as to the purpose of your research and the boundaries of your work, in other words, your terms of reference.

It goes without saying that you should also keep your reader in mind at this stage. A specialist technical report is not readable for laymen unless it has been written for a wider audience. You do not write for yourself but you write for a specific audience. A difficult subject needs more explanation and structure if your audience is unfamiliar with the subject. Your opinion of, for instance, your final thesis is less important than your audience's appreciation of your report.

### 2.2 Filling in the chapter Method

The next step is thinking of what should follow on the basis of the problem posed and in which order. In other words you should produce a plan of approach. Such a plan varies from subject to subject.

In a research report a logical sequence would be to deal with what is researched, why, how and with which results.

When you have to investigate a problem, you first describe the what and why of the problem, next the causes are characterized and finally you indicate a possible solution.

A useful scheme of a number of so-called fixed structures is to be found in Appendix II.

Working with fixed structures has two advantages. Firstly, in this way you get a clear picture of the activities that have to be carried out and the order of these activities. Secondly, fixed structures will help you to make a distinction between major and minor issues.

The main questions of a fixed structure can be taken as a starting-point for the subquestions. The hierarchy in major points, minor points and details can be represented by means of decimal coding. This system of coding is also used in the table of contents.

Important limiting conditions for the method of enquiry are the scope and form of the report and the amount of time available. Problems many report writers come across are: starting too late; forgetting about test print-outs and underestimating the time necessary for a correct and good presentation of the final version of the report.



After you have decided on a rough outline you start gathering information. Information can be obtained from a graduation assignment. This could be literature study, but also a technical subject or a feasibility study. Often the source of information is a mixture of literature study and data gathered in practise through research or for instance a questionnaire.

With the main- and subquestions as a starting point gathering information can be divided into the following two steps:

- collecting material
- arranging material

Collecting material: Select relevant information, that is to say information that is within the scope of the statement of the problem and answers the main- and subquestions that have been formulated. Make a distinction between factual information and opinions.

Arranging material: Collected material can be presented in different ways, for instance chronologically, thematically and hierarchically. If you have thought critically about your method of enquiry, your collected material will fit in easily. Here common sense prevails over ordering principles.

Relate the order in which you present your information to the recipient of this information. The main line of the report should be clear and the most important information should be placed at the beginning of every chapter. Present your information in an order that is logical for the reader.

### **2.3 Filling in the chapter Results**

Of course only those data are used that fit logically into your plan of approach and that are important to it. The information gathered should be rendered carefully and exactly. To this end we refer you to the chapter on composition; especially the paragraph on tables and figures plays an important part. The chapter on linguistic usage is particularly relevant for correctly rendering results.

During your project, while working on your report, it might be necessary to adjust your plan of approach. Take care to maintain a logical order and to keep main- and side-issues apart.

### **2.4 Filling in the Conclusions and Recommendations**

Traditionally, the issue of every report is its result. The conclusion is the end; introduction and centre chapters are the means.

The conclusions should exactly fit the problem posed in the introduction. Furthermore, you can only draw conclusions that are well-founded in your centre chapters.

To this end study the hints and suggestions provided with the conclusions of this report.

In some reports conclusions are followed by recommendations. These recommendations should be closely linked to the conclusions. Be reticent in your recommendations.

[Contents](#)

### 3 Presentation

A well thought out presentation does not only carry with it a positive picture of you to the reader, it also enhances the accessibility to a great extent. Apart from leaving your calling-card with the presentation, you considerably increase the level of your intended transference of information.

A good presentation does not only mean a handsome jacket or binding. You must also consider such questions as a logical ordering of the report, the distribution of the text throughout the page, the processing of graphics, and quality of printing and copying.

Form and contents are inseparable and together contribute to the purpose you have set yourself.

#### 3.1 Typography

It is most important to consider the typographical aspects of your report. Give some thought to choosing the quality and the format of the paper you use, to installing the correct margins, line spacing, font, enumeration techniques, space between text blocks and even to positioning the page numbers.

Always keep the following starting points at the back of your mind when working on your report:

- Realize a maximum of information with a minimum of means.
- Be consequent.
- Use A4-size paper of a good quality. Eighty gram quality is usually sufficient.
- Pages should be numbered throughout at the right-hand top corner or in the middle. Start counting at the title page, but do not actually print the page number until after the table of contents.
- Use a wide margin on all sides. At least one inch for the top, bottom and right-hand margins; one and a half inch for the left-hand margin, bearing in mind the report should be bound. This report uses slightly wider margins.
- Use single line spacing.
- Make a purposeful use of blank lines. Insert an extra blank line over and below figures, tables, enumerations, headings, formulae and section titles. Separate paragraphs by using blank lines.
- Make use of dashes in enumerations; do not use numbers.
- Select a current type of letter (font) and use it throughout the report. Many different or italic fonts create a restless impression. Do take the opportunity of using bold or enlarged print to put emphasis where you want it. See also Appendix I, about word processing and writing reports.
- See to it that your text is correctly spread across the page. Do not leave a single line belonging to a longer paragraph to appear all by itself at the top or at the bottom of a page (Widows/orphans).

### 3.2 Tables and graphs

Tables and graphs illustrate, clarify and/or summarize the information provided in the report, if used modestly and well-chosen. Often they are more informative than language. A carefully chosen graph can tell the reader more than long argumentation. Moreover, illustrations enliven your text. Correctly used, they contribute to the professional image of your report.

All tables and graphs should have a number and a title. These are printed as headings over tables and as captions below charts and graphs.

Both categories should be numbered independently. It is wise to start numbering with each new chapter, rather than throughout the entire report in case changes have to be made at a later stage. For instance: figure 3.1 is the first figure in chapter 3.

If you derive tables or graphs from other material, always insert the source below the title. You give the name of the author and year of publication. The complete specification is given in the list of references.

In the text you need not repeat the information that is shown in an illustration. It suffices to indicate the essence of it. Each figure should be referred to at least once. Do so immediately before the figure is presented. A correct formulation is not 'see the following graph', but 'see figure 3.1'.

As a rule charts, tables and graphs are embedded in the text. There are two notable exceptions, however:

- if the same illustration is needed at more than one place in the report;
- if illustrations are so numerous or extensive that they would interfere with the text too much.

In such cases a List of Figures should be incorporated. Do so in the Table of Contents or at the start of the Appendix.

With the help of modern word processors it is possible to incorporate various types of visual information in the report in a natural way. To give you an example of including such material (see table 3.1).

Table 3.1 The number of business reports circulating in the Netherlands in Dutch and English.

Year	Dutch	English
2011	26.355	18.251
2012	49.661	24.894
2013	53.788	26.845
2014	66.997	28.555

Furthermore, including various types of graphs can improve the quality of your report to a great extent. Often the help of a spread sheet programme can produce good results (see figures 3.1 and 3.2).

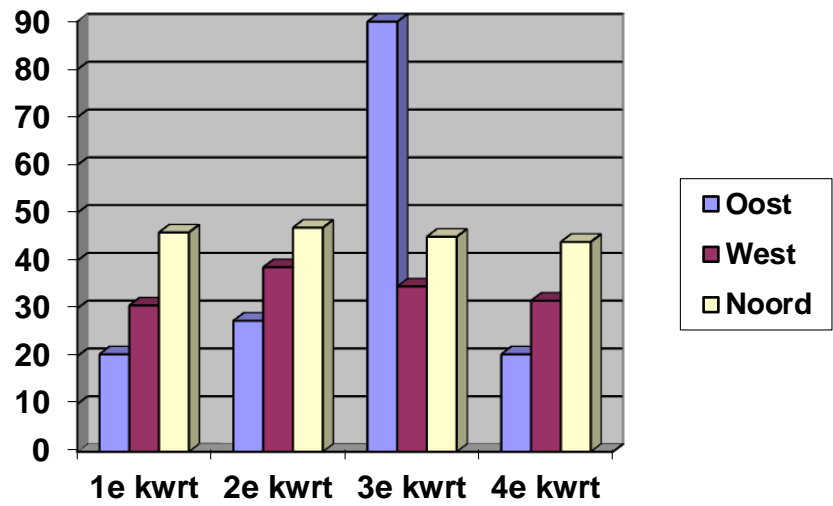


Fig. 3.1 Bar chart

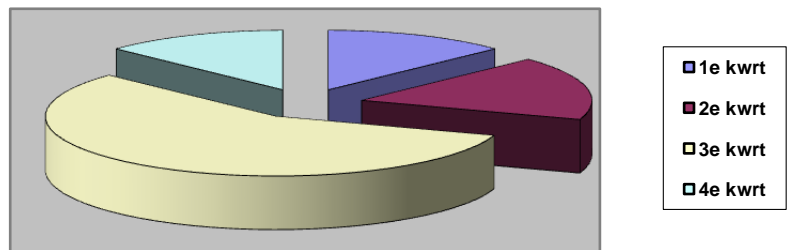


Fig. 3.2 Pie chart

Technical information is often supported by drawings or diagrams (see figure 3.3)

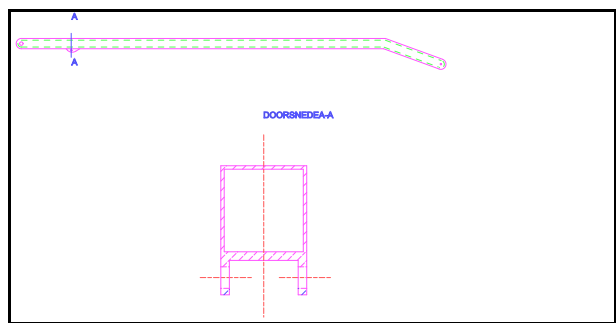


Fig. 3.3 Jib

Finally, the use of presenting formulae in your report is illustrated (see formula 1).

$$f(x) = \sum_{n=1}^3 \frac{f^n(a)}{n!} f(x-a)^n \quad \text{rond } x = a \quad (1)$$

### 3.3 Quotations

Quotation should be verbatim and to the minutest detail. If you decide to include them, see to it that short quotations are incorporated in your sentence. For instance:

When discussing the use of plain English, Doris Wheatley, 1988 (p.21) mentions societies that propagate the correct use of the language by giving prizes for finding the worst examples of meaningless English and she concludes that 'writers of pension booklets usually provide some excellent entries for these competitions'.

On the other hand, when a quotation is longer it is advisable to reproduce it separated from the main text by a blank line, indenting at the left and right hand margins. If you decide to omit something from a longer quotation, you indicate that by inserting three dots between square brackets. If quotation marks appear within a quotation they are indicated by double quotation marks. For instance:

'What is "plain English"? There is no simple answer to that question. Probably the best-known attempt [...] is that put forward by C.K. Ogden in 1929, [...]. This was not so much to make English easy to understand as to provide a universal language, "debabelizing" as he called it. The vocabulary was cut down to 850 words, which he claimed could do the work of 20,000 [...]. For example, "prepare" becomes "get ready" and it is claimed that such combinations of words can replace 4,000 ordinary verbs. Basic English is "idiomatic English with no literary pretensions but clear and precise at the level for which it was designed".'

(Doris Wheatley, 1988. p. 21)

### 3.4 Notes

Notes are used to refer to sources. Moreover, they are used to modify certain statements. In scientific publications each word, every statement should be accounted for. However, in a traineeship paper, or in some business reports, matters are different. Whenever a graduation paper involves literature study, you can hardly avoid using notes. Realize that the use of notes does not generally improve readability, because notes interrupt the reading speed. Print notes at the bottom of the page as footnotes<sup>1</sup>, rather than as endnotes after each chapter to prevent your reader from having to leaf through the report back and forth.

[Contents](#)

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<sup>1</sup> This is a correct way of inserting a footnote

## **4 Use of language**

The use of language in a report should be in keeping with your aim, namely to convey information at maximum comprehension. The author should do this businesslike and efficiently. The reader has to be informed well and exactly. Try to identify with your audience and ask other people to comment on your style at a regular basis.

In this chapter you will find general information concerning formulation, spelling and punctuation.

### **4.1 Formulation: clear, concise, complete**

While writing your report, constantly put yourself in the reader's place. In the initial stage the correct choice of words, sentence construction, spelling and punctuation are of minor importance. It is better to get your thoughts on paper in a relatively uninhibited way. The copy that you draft in this way can take its definite shape in a later stage, after corrections.

When correcting a draft copy it is advisable to do so step by step. Devote separate rounds to: choice of words, sentence construction, paragraph division, spelling and punctuation. A good word processor is a valuable support in this. See also Appendix I.

A clear and concise formulation of sentences is best achieved by keeping them brief and by being on the alert to spot vagueness or words and phrases that appear too difficult.

Wherever possible, make use of enumerations and always write comprehensibly.

Long sentences often do convey the author's thoughts correctly, but they are not beneficial to a good interpretation by the reader. Long sentences with many sub-clauses decrease the accessibility. You should bridge the gap between you and the reader. Clear paragraph construction is part of that bridge. A paragraph in which the main issue is put first while the rest consists of short explanatory sentences is a step in the right direction.

Try to realize that inside your head a great amount of information is stored in a rather compressed way. This does not mean, however, that the sentences you produce in your report should be equally compressed. To the author such passages are perfectly clear; to the reader they are often unreadable.

To illustrate the result of sentences that run on too long and contain too much information here are two passages of English as it should be avoided:

The coil pump supplies eluent phase at column pressure to the injection valve by way of a cut off valve activated by either a power failure or by a digital output of the computer, the digital output operating a relay switching the electrical supply to the valve, which has two solvent passages and is arranged such that the eluent phase can flow through one whilst the sample passes through the other, injection being achieved by switching the slide valve by a pneumatic controller operated by means of a signal switch from the timer unit of the Cecil sample charger.

It seems possible that the adrenergic-cholinergic antagonism may be mediated through the adenylyl-cyclase system, since it is known that whereas noradrenaline increases the synthesis of cyclic AMP, acetyl choline inhibits this process, thus the acetyl choline liberated at vagal endings may decrease the quantity of noradrenaline released at postganglionic terminals and also decrease the accelerated rate of cyclic AMP synthesis in myocardial cells initiated by noradrenaline liberated during sympathetic neural activity.

Last but not least: pay attention to grammar. See Appendix III for more detailed suggestions.

#### 4.2 Spelling

Pay close attention to spelling. Spelling mistakes are utterly unnecessary and can disturb the reader to a greater extent than you may imagine. These mistakes leave an impression of carelessness, which the reader might take to be symptomatic for the entire report. The credibility of such a report or research will be influenced in a negative way.

#### 4.3 Punctuation

Punctuation is there to facilitate reading, not to make it more intricate. Keep the following guidelines in mind:

- comma (,)
- \* In general, put a comma when you suspect that the sentence can cause a misunderstanding without it.
- \* Read the sentence aloud and place a comma where you hear one.
  
- colon (:)
- \* Use a colon to introduce:
  - an enumeration;
  - a description, explanation or illustration;
  - a direct quotation.
  
- semi-colon (;)
- \* A semi-colon is used when you do not wish to use a period, but think a comma too weak a separation. Clauses separated by a colon should have a definite relation.
- \* Also use a semi-colon to separate the elements in an enumeration. The last item is then followed by a period.
  
- quotation marks ('...')
- \* They indicate that you directly quote spoken or written language.

- \* They are used to put emphasis on the special meaning of a word.
- \* Put a word in quotation marks when you do not use it in its literal meaning, but in the figurative one.

Generally speaking, exclamation marks (!) are not used in reports and the use of question marks (?) should be kept to an absolute minimum. Only in direct questions, such as in the Introduction, when you start introducing the subject of the report, can question marks be used.

Words or phrases should preferably not appear (in brackets) and full sentences never do.

[Contents](#)



## **5 Conclusion / recommendations**

In spite of the descriptive character of this report the following conclusions can be drawn:

Contents and presentation are inseparable. A report with a strong contents may hardly get across with your audience if it has a weak form. A sloppy appearance, bad structuring and shaky linguistic usage can seriously damage the initial aim of the report.

Strictly adhering to the laws of form, forces the author to think systematically about the contents and will therefore be beneficial to a better understanding by the audience as well as by the author himself.

Finally: writing a good report can be learned by everybody.

[Contents](#)

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[Contents](#)

## Appendix

- I Fixed structures
- II Grammar and report writing

## Appendix I Fixed structures

<p><b>The problem structure</b></p> <p><b>THEME</b> (=a problem)</p> <p><u>What is the exact problem?</u>  <u>Why is it a problem?</u>  <u>What causes the problem?</u>  <u>What can be done about it?</u></p>	<p><b>The action structure</b></p> <p><b>THEME</b> (=an action)</p> <p><u>What is the purpose of the action?</u>  <u>What are the conditions of the action?</u>  <u>How is the action carried out in broad outline?</u>  <u>How are parts of the action carried out?</u>  <u>How is the course of the action checked?</u></p>
<p><b>The measure structure</b></p> <p><b>THEME</b> (=a measure)</p> <p><u>What is the exact measure?</u>  <u>Why is the measure necessary?</u>  <u>How is the measure taken?</u>  <u>What are the effects?</u></p>	<p><b>The design structure</b></p> <p><b>THEME</b> (=a design)</p> <p><u>What is the design meant for?</u>  <u>What requirements should be met?</u>  <u>What resources are used?</u>  <u>What does the design look like?</u>  <u>What are the merits of the design?</u></p>
<p><b>The evaluation structure</b></p> <p><b>THEME</b> (matter under evaluation)</p> <p><u>What are the relevant features of the subject?</u>  <u>What are the positive aspects?</u>  <u>What are the negative aspects?</u>  <u>What is the final evaluation?</u>  <u>What can or has to be done about it?</u></p>	<p><b>The research structure</b></p> <p><b>THEME</b> (=topic under investigation)</p> <p><u>What is investigated?</u>  <u>Why is it investigated?</u>  <u>What methods are used?</u>  <u>What are the results?</u>  <u>What are the conclusions?</u></p>

Taken and translated from: Steehouder e.a., 2014.

[Contents](#)

## Appendix II Grammar and report writing

To write a grammatically correct report you need to refresh part of your grammatical knowledge. If you study the following specific rules thoroughly you will not give anybody the chance to say that you write Double Dutch.

There are two main tenses in English:

- **Present**

- **Past**

Both tenses can be found in their simple form and both tenses can be combined with either a progressive or a perfective aspect or a combination of these aspects.

As the past tense is only used for a specific point of time in the past, this tense is not relevant here. Reports are not about when something was done, but about what has been done. In scheme:

PRESENT	
Simple	I draw ...
Progressive	I am drawing ...
Perfect	I have drawn ...

Moreover reports are usually about what is investigated and not about the person who investigates. The passive voice is often used. Therefore the scheme is supplemented with the passive voice.

PRESENT		
	Active	Passive
Simple	I write the report	The report is written
Progressive	I am writing the report	The report is being written
Perfect	I have written the report	The report has been written

Finally, a short discussion of tense and aspect:

Simple present: Is used for actions in the present which happen usually, habitually or generally, for stating general truths and for describing processes in a general way.

The simple present is formed by the use of the infinitive but adds an 's' for he/she/it. E.g.: A scientist often uses mathematics in his work. Researchers always use statistical methods in their work.

Progressive: The main functions of this aspect are to express actions happening at the

moment of speaking or writing, and to emphasize the continuous nature of actions happening in the present. For this reason it is generally associated with expressions such as: at present, now and nowadays.

The progressive aspect is formed with to be + infinitive+ing. E.g.: At the moment those specialists are collecting data about new materials.

Perfect:

This aspect has two functions: it is used for an action beginning in the past and still continuing. Moreover it is used for something which happened in the past but has effects in the present.

This aspect is formed by have/has + infinitive+ed. E.g.: I have worked on this project for two years. I know how to operate the machine because I have read the instructions.

[Contents](#)