Mandatory Guidelines for Academic Writing

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Abstract

Writing the first academic text is a challenge for many students. This paper targets exactly those students and provides answers to many questions that arise when writing the first seminar paper or the bachelor/master thesis. Writing an academic text means to express research in your own words while writing in an objective way based on scientific literature. We develop in detail how students can achieve this aim by working through four essential points, illustrated by several examples. While the text explains how students can deliver a decent literature review thesis, the details of an own small application of scientific methods, e.g., an empirical analysis, need to be discussed with your supervisor.

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1 Introduction

Each year, the University of Halle-Wittenberg receives students from many other places of Germany and foreign countries. As a result, it is pertinent for us to require students to adhere to common norms while writing their seminar papers and/or bachelor's/master's thesis.

This document provides guidelines on academic writing for students who write their seminar papers or thesis with us. In general, an academic paper develops a straight line of argument and structures diverging ideas, aspects and findings both conceptually and logically. It does so with clarity and originality of expression. The aim of a bachelor/master thesis is to demonstrate that the author is able to deal independently with a given problem while making use of the relevant scientific literature. That is, a successful thesis shows that you can write an academic text. Writing seminar papers aims at developing this competence.

Before starting to work on such a text, it is useful to create a vague schedule and leave enough time for correction. You should proofread your text intensively with regard to content (originality of the content, flow of the arguments) and language (orthography and grammar) before you hand it in. Furthermore, expression and spelling style should correspond to scientific standards.

Writing an academic text has four dimensions. You should demonstrate that you…

1. … are able to express research results in your own words and in an objective way;
2. … can reference your text in a scientific way;
3. … have a good command of the literature and scientific language;
4. … are able to implement particular formatting rules.

In what follows, we explain these four points in more detail in Sections 2 to 5. Section 6 provides hints on effective proofreading. Finally, Section 7 concludes.

2 Express research results in your own words

Any academic text has three elements: introduction, main part, and conclusion. We briefly describe what it means to develop an own academic text by working through these three elements. We then briefly explicate what we mean by being 'objective'.

2.1 Introduce the topic

The introduction usually starts broadly and then becomes narrower in order to introduce the particular problem/question you are going to analyze (Figure 1). It is a good idea to formulate a research question that your paper/thesis seeks to answer. Research question typically involve words like 'how' or 'why'. A good introduction also includes the motivation of the research question studied: Make sure to explain why or in which sense your topic is important and relevant, e.g., by providing a few statistical facts on it, if available, or some corresponding statements of prominent economists, etc. Finally, the introduction includes an overview of the content of the remainder of the paper.

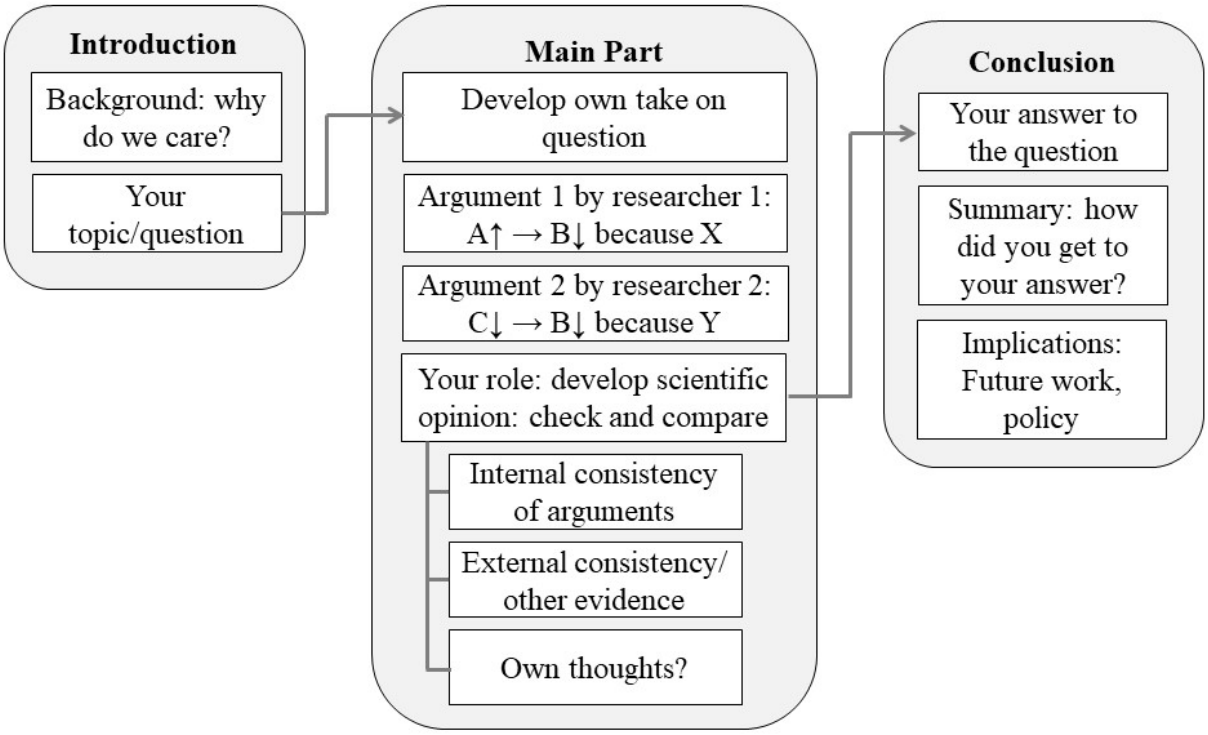

Figure 1: Workflow and structure of a seminar paper.
Note: The figure shows how workflow and structure of a seminar paper are one entity. The list of arguments in the main part can be extended by the student and must not epitomize the only element of the main part: 'Your role' is important. Own thoughts should also be arguments and must be written in an objective way. Further details are discussed in the text.
Source: self-prepared.

2.2 Your main task: the main part

We first explain very briefly your main task: expressing the scientific arguments that are relevant for your topic in your own words.[1] Figures, tables, formulas and appendices can help you to support your take on the topic.

2.2.1 What do we know and why?

The main part of the text addresses the question you aim to answer in detail (Figure 1). Be creative! Develop an own structure of the main part instead of copying the structure of research articles. The main part should be structured by several sections, so that the reader can recognize a logical flow of thoughts. You have to read the literature first (in the best case with a particular question in mind) to become able to develop your own take on the topic. What do we know? Why do we know that? That is, which methodologies do the authors use to derive their findings? What do we not know? Can you identify contradictions between two authors or even knowledge gaps?

[1] Some theses (particularly master theses) aim to go beyond a pure review of the scientific literature and contain an own data analysis or a theoretical model to answer a question. What follows also applies to these theses but additional requirements might apply (e.g., description of data set etc.). Discuss the outline of the main part of such a thesis with your supervisor. Any small step towards applying empirical/theoretical methods on your own is welcome also in seminar papers.

An argument of one researcher could be: A↑ → B↓ ('If A increases, B decreases'), because X (see Figure 1 'Main Part'). The researcher provides you with a scientific reason X to convince you to accept the →. Thus, the X following the word 'because' is important. Possibly, another researcher argues: C↓ → B↓, because Y. Your job is to explain these arguments to the reader of your seminar paper or thesis in your own words. But do not just list them: Maybe these arguments are contradicting each other and one of the reasons, that is, either X or Y might be more convincing. Or both arguments help to illuminate why we end up with B↓.

Can you add something to deepen/support or illustrate your own perspective on the question you analyze? For example, can you add an own figure structuring the literature or an own plot of data which is relevant for your topic? If you come up with an own figure or table, you can describe the latter and thus, you really add your own perspective, maybe even on the reason X given in the literature for A↑ → B↓. This is much better than copy-pasting result tables you find in journal articles, because it signals that you are thinking.

There are four standard elements of a seminar paper/thesis, which do not all have to be included necessarily but could support your main part. For example, you can support an argument that you either report or make yourself. In what follows, we discuss these four elements: figures, tables, formulas, and appendices. We then explain the purpose of the conclusion of your text.

2.2.2 Support your text with figures

Figures like diagrams or charts etc. are added to the text to support the reader's comprehension. They must have a value added relative to the text – otherwise they could be skipped. Make sure to define all axes (if there are any), and to explain the figure itself and its contribution to the overall argument in the main text. When there are curves (e.g., demand and supply curves), always explain their slopes as well as their interpretation intuitively.

Whenever possible, avoid to copy and paste figures from the original source (ensure readability, if you cannot avoid copy-paste, e.g., due to lack of original data). Instead, try to produce your own figures. Nevertheless, if your figure is inspired and therefore similar, or even identical, to a figure from a reference, you need to cite it correctly (further details on citation below). Figures are consecutively numbered, and their title and reference should be indicated directly <u>below</u> the figure (see Figure 1, for example).

2.2.3 Support your text with tables

The preparation of tables in the text is similar to the preparation of figures. There is one exception: a table's title appears <u>above</u> it, while the reference stays below. When the original source contains large regression tables, for example, produce your own table of only those few results that you really want to comment. You could also produce a table that contains estimates of two different authors. For an example see Table 1, which shows summary statistics for regional GDP in Germany.

Table 1: Summary statistics: GDP in Germany at the county level, 2017

Variable	mean	min	max	sd	n
GDP [Mio. EUR]	8237	1114	139683	12745	402
GDP per capita [EUR]	37225	16398	172437	16177	402

Note: Mio: million, n: number of observations, sd: standard deviation.
Source: self-prepared; data from Statistische Ämter des Bundes und der Länder (2019).

2.2.4 If relevant: Support your text with mathematical formulas

Mathematical formulas appear both in theoretical and empirical work. They might describe an economic model or an econometric model, for example. Usually, the purpose of mathematical formulas is to clarify and support an argument: A↑ → B↓, because X.

Mathematical formulas should be produced by the help of a formula editor or special mathematical software. Formulas appear in a separate line (except for very short ones) and are numbered consecutively flush right, e.g.:

$$\log u_i(t) \equiv \int_0^1 \log\left[\sum_j \lambda^{j(\omega,t)} x_i(j,\omega,t)\right] d\omega \qquad \text{for } i = N, S. \tag{1}$$

This helps to refer to a specific equation, e.g.: "Equation (1) is the instantaneous utility function of a Northern or Southern consumer, respectively (…)". Do not restart numbering in new sections. Section numbers are not included in equation numbers.

Explain the notation! What does u_i mean? Avoid that your reader has to search for the explanation. All notation should be in italics (e.g., u_i).

2.2.5 Optional: Support your text with appendices

In most cases, it does make sense to include figures, tables, examples etc. in the main text where they are discussed, so usually they do not need to be shifted to an appendix. If the number of figures, tables etc. grows large, such that the flow of reading would be disturbed, it would be reasonable to shift them to the appendix.

Detailed step-by-step derivations of mathematical formulas (typically missing in original journal articles due to space limitations, but highly recommended to include in a seminar paper or thesis in order to prove that you have understood the derivation) do belong to mathematical appendices.

Note that all key results from the appendix (except step-by-step derivations) must be discussed in the main text. Indicate clearly in the main text in which of the appendices further derivations or supplementary material can be found. When adding appendices to the table of contents, give them meaningful titles, e.g.: "Appendix 1: Derivation of Equation (4)".

2.3 The conclusion: Summary and implications

The conclusion of your text, the last element in Figure 1 above, often starts with a short summary of the key point(s). Have you answered the question (or provided a solution to the problem) that you raised in

the introduction? How did you derive your answer (literature review, own data analysis, own theoretical model)? Finally, the conclusion puts the paper in a broader context: What could future research (or your master thesis) analyze? One way to go from the summary to future work is to highlight any limitation your argument has. In addition, you can discuss whether there are any policy implications.

We reviewed the three parts of an academic text, that is, introduction, main part, and conclusion. In addition, we explained what an argument is, and how you can support your text with a figure, for example. However, we have not explicated the last part of the first dimension. Recall that the latter was to 'express research results in your own words and in an objective way'. The word 'objective' indicates that the written language of your complete text should be strictly formal. Students should avoid the use of spoken language in their writing (e.g., incomplete sentences, short forms, slang, etc.). But there is more to add on the term 'objective'.

2.4 What does it mean to be objective?

We stated above that you should develop your own take on a topic. Thus, in how far is your own opinion relevant? Most people have a political opinion, some are religious while others are not. The point about being objective is that these personal views such as your political opinion or your religion must not affect your academic text in the sense that they are crucial for accepting an argument. Think of these personal views as a 'backpack' that you take off when starting to write your paper. Of course, you can have and actually should develop an *own scientific opinion* in your text. Your scientific opinion must be substantiated by sound scientific arguments.

Recall from above that an argument is: A↑ → B↓, because X. We argued that you need to provide the reader with a scientific reason X so that the reader can accept (or disagree with) the →. This is, because otherwise you only deliver a claim. Being objective means that you need to provide theoretical or empirical reasons to fill X after 'because'. Why do you get from A↑ to B↓? Because the model by Romer (1990) shows …; or because the empirical evidence provided by Acemoglu et al. (2001) ….

You construct your scientific opinion with arguments, not with claims. Arguments are objective in the sense that the reader can follow/understand how the evaluation/statement/conclusion is derived using reasons (that is X) from the scientific literature or ways of scientific work (either empirical or theoretical). That is, your argument should not be sensitive to any political or religious view. If a particular political view, for example, appears in X and is crucial to accept the →, you need to revise X or even rethink the claim A↑ → B↓.

Additionally, you must never adopt uncritically scientific opinions that you find in the literature. If you follow the scientific opinion of a particular researcher or you disagree, you should always explain why, that is, you should provide X. Prestige of a particular researcher or the observation that a majority of researchers adopts a particular view are no arguments. The smartest person can make mistakes and the majority can be wrong as well. Thus, prestige or majority views cannot work as substitutes for the reason X.

3 Reference your text in a scientific way

In what follows, we first define plagiarism. Second, we provide an overview on the purpose of citation and its different versions. The final subsection works out the details and provides examples for each case.

3.1 Plagiarism

Expressing research in your own words means that we strictly prohibit students to be involved in **plagiarism**. Plagiarism includes:

- "*turning in someone else's work as your own*
- *copying words or ideas from someone else without giving credit*
- *failing to put a quotation in quotation marks*
- *giving incorrect information about the source of a quotation*
- *changing words but copying the sentence structure of a source without giving credit*
- *copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not*." (Turnitin 2017)

To avoid plagiarism, you have to cite. The following section provides you with detailed instructions on correct citation. When discussing correct citation, we highlight the specific forms of plagiarism by referring to the online-tutorial provided by Indiana University (2019a).

3.2 Purpose and types of citation

The purpose of referencing the text by using citations is to show that the information you use is scientifically grounded and to show the reader the origin of an argument, a reason or some other information. Basically, each usage of others' thoughts and ideas has to be indicated by a precise reference. The usage of another person's ideas without proper citation (i.e. plagiarism) will lead to downgrading of the thesis, and to failing the examination in severe cases.

To cite references, you have two options: (1) in-text citation style and (2) footnotes. All types of quotation have to be followed by a citation, which contains (only) the necessary details to locate the publication in the list of references (= bibliography) easily. These necessary details are: author surnames (for one or two authors; in case of three or more authors: first author's surname, followed by "et al."[2]), year of publication, page number.

You have to decide on one of the two styles (in-text citation or footnotes) and use the chosen one consistently throughout the paper or thesis. You also have to distinguish between direct or indirect quotation. In what follows, we provide examples of these different types of quotations in either footnote or in-text citation style.

[2] However, make sure that you include all coauthors of the publication in your bibliography.

3.3 Details and examples

Direct quotations, i.e. word-for-word quotations from an original source, should be used rarely and quotation marks need to be put at the beginning and at the end of the quotation. These literal quotations, orthographically correct or incorrect, should be retained as they are. However, if it is useful for the flow of the text, minor omissions may be made but have to be marked by "(…)". Supplements by the student instead are indicated by "[supplement text]".

Example of footnote style:

> The authors aim at answering the following research question: "What are the fundamental causes of the large differences in income per capita across countries?"[3]

Footnotes in the text contain only short information about the cited reference: the author's name, the year of publication, the page number. All references are listed in detail only in the bibliography/list of references. Footnotes are given in superscripted form and are numbered consecutively. Footnotes are placed at the bottom of the text page (as here). The usage of the footnote function in your word processor is strongly recommended.

Example of in-text style:

> The authors aim at answering the following research question: "What are the fundamental causes of the large differences in income per capita across countries?" (Acemoglu et al. 2001, p. 1369).

Again, also the in-text style only uses the short information about the cited reference.

Independent of which style you use, the reader of your thesis must find the complete reference to Acemoglu et al. (2001) in the bibliography section, just as in this document. Otherwise you commit so-called word-for-word plagiarism.

Specifically, "Word-for-word plagiarism (…)

1. borrows ideas from the original source material, **and**
2. takes seven or more words in sequence from the original source material, **and**
3. **lacks any** of the following:
    - quotation marks surrounding the words taken, **or**
    - the full in-text [or footnote] citation with author name(s), the date, and must include the specific location within the source (e.g., page number or other locator) where the words are taken from, **or**
    - the bibliographic reference." (Indiana University 2019b)[4]

[3] Acemoglu et al. (2001, p. 1369).

[4] Note that this direct quote does not contain a page number, because it is an internet source. The list of references, however, contains the exact link to the quote. If you cite directly from a book or article you must provide the page number so that the reader can directly locate the quote in the given source.

Detailed examples of how to avoid word-for-word plagiarism are provided by Indiana University (2019c).

Indirect quotations are statements and findings by scholarly authors that are reproduced in own words. Example of in-text style:

> An important question in macroeconomics is why some countries are poor while others are much richer (Acemoglu et al. 2001, p. 1369).

Example of footnote style:

> An important question in macroeconomics is why some countries are poor while others are much richer.[5]

If you use exactly the same reference again that you already used before, including the same page number, you should avoid citing it again as it is but instead use the abbreviation "ibid." in order to make the citation shorter. To allow the reader to verify the given source as quickly as possible, you should always include exact page numbers also in an indirect quote. Only if you refer to the main idea of a research article, you can consider to drop the pager number(s).

Example of in-text style:

> The authors aim at answering the question of why some countries are poor while others are much richer (ibid.).

Example of footnote style:

> The authors aim at answering the question of why some countries are poor while others are much richer.[6]

You have to cite every single sentence or (part of a) paragraph this way, once it is not completely your own idea/thought. The result should <u>not</u> be that your paper or thesis mostly consists of citations, but instead you are urged to include as much as possible thoughts, explanations and interpretations which are truly your own. As a rule of thumb, between three and seven citations per page are reasonable.

When paraphrasing other authors' ideas, it is highly important to avoid paraphrasing plagiarism, which: "(…)

1. borrows ideas from the original source material, **and**
2. is **not** word-for-word plagiarism, **and**
3. **lacks any** of the following:
    - the in-text [or footnote] citation with author name(s) and date (…), **or**
    - the bibliographic reference." (Indiana University 2019b)[7]

[5] Acemoglu et al. (2001, p. 1369).
[6] ibid.
[7] We urge you to always provide exact page numbers, that is, the "locator" in your quotes (cf. the original statement given by Indiana University 2019b).

Additionally, in order to reduce the number of in-text citations or footnote citations, you can use language that signals the reader that a particular information/thought etc. is not your thought but the other author's contribution.

Example of language that signals the source of information:

> An important question in macroeconomics is why some countries are poor while others are much richer (Acemoglu et al. 2001, p. 1369). These authors test the role of institutions as an explanation for different income levels.

The reader understands immediately from your use of language that Acemoglu and his coauthors are providing an empirical test of the effect of institutions on income although you did not add the citation at the end of the sentence. There are many other possibilities to clarify the reference by the appropriate use of language. Be precise with your wording and your language: It is of utmost importance that you avoid paraphrasing plagiarism. The Indiana University (2019c) provides detailed examples of how to avoid the latter.

In addition to these general types of citation, there is one special case. If you cite a paper that you have not read but that other authors you have read are citing, you have to adopt a second-hand citation.

Example of a second-hand citation:

> They present the argument by Glaeser et al. (2004) that education affects institutions (cited by Acemoglu et al. 2005, pp. 47-8).

If you cite in this way, the reader can understand that you have taken the argument by Glaeser et al. (2004) from Acemoglu et al. (2005) without having read the work by Glaeser et al. (2004). Make sure that you include both sources in your references. However, try to avoid second-hand citation in general, and use the original sources instead whenever possible.

Providing the exact page numbers in your citations is important for the reader. In this way, the reader can check your source of information quickly. Exact references help to make your text objective. If a cited fact is gathered from one page of a publication use the abbreviation "p.". If it is taken from more than one page, the abbreviation "pp." is applicable. The first and the last page of the cited information have to be indicated, e.g. "pp. 123-125". However, do not indicate too many pages of a publication, e.g. "pp. 2-25", since that would be very imprecise. It is also possible to use the abbreviation "f." to indicate the "following page", for example: pp. 124f for pp. 124-125. Sometimes you might also find "ff." for multiple "following" pages. However, we discourage you to use "ff." due to the involved imprecision. The amount of space you can save by using "ff." is not worth the potential confusion you can cause for the reader.

Figures and tables also need to be referenced so that the reader can understand immediately whether this is your own figure or whether the figure is from another author. When a figure is identical to that of another author, cite this by "Source: author XY, year of publication, page number". When a figure is

similar but not identical to that of a reference, cite this by "Source: modified from author XY, year of publication, page number". Indicate self-prepared figures by "Source: self-prepared".

Whenever you copied a mathematical formula from an original source, cite it correctly. When there is a significant number of equations in a row (e.g., when reproducing a complete economic model), there is no need to cite each equation separately, however. Instead, you can indicate the source by a statement as follows: "All equations (1) – (12) are taken from author XY, year of publication, pp. 326-28".

Final note: In general, minimize the use of internet sources as much as possible. Online sources always need to be checked for their compliance with the scientific standard. Online articles without author or publication date should not be used.

4 Command of the literature and scientific language

A successful seminar paper or thesis demonstrates that you are able to review the relevant scientific literature. To achieve that aim, you need to know how to find literature. Furthermore, students should demonstrate that they understand the scientific concepts and language they use. Thus, students should add explanations that clarify scientific terms for the reader.

4.1 Finding literature

Often you already know some references you have to include in your seminar paper. But very likely there is more knowledge on your topic. How can you find relevant literature?

Useful literature hints can be found in the bibliography of your assigned core literature, on https://scholar.google.de/ and in databases (OPAC, GBV, etc.). As for Google Scholar, type the exact title of a key source that you already have, and then click on "cited by" to find other (typically more recent) papers that have cited your reference – these may be relevant for your topic as well. The use of international journal articles is particularly encouraged.

Why are journal articles so important? The reason is that articles published in a *peer-reviewed* journal have gone through a procedure called peer review.[8] In short, peer review ensures that the article adheres to particular standards of scientific work and provides some new knowledge. A researcher who aims to publish in a journal has to convince other researchers (the 'peers') in the area of research and the editor (also a researcher) about his/her argument, that is, A↑ → B↓, because X. Only if the researcher can convince all reviewers and the editor that the argument is correct and important, the article is published. Usually, the author has to revise the manuscript carefully one or more times based on the criticism received. You can easily check, if a journal is peer-reviewed by using information from the journal's website.[9]

[8] This is not always the case. Some journals do not have a peer review procedure.

[9] Check the guidelines for authors who aim to 'submit' to the journal: See the journal called *Review of Economics and Statistics*, (https://www.mitpressjournals.org/journals/rest/sub) for example, and search for the words 'peer' or 'review' or the *Journal of Applied Econometrics* (https://onlinelibrary.wiley.com/page/journal/10991255/homepage/forauthors.html), retrieved 18.10.2019.

To find economics journals, you can use a journal ranking. These rankings also tell you that not all economics journals are equally important. To spot highly relevant journals, the use of the *Handelsblatt* journal ranking is encouraged, which is available online (Sturm and Haucap 2019a; go to 'VWL-Ranking' and then to 'Journal Weights List').

In the last years, a problem called predatory publishing has appeared. This means that a journal's website and the articles look scientific but in fact the journal is not scientific and does not have any quality control. In the case of the economics discipline, this issue might become relevant, if the journal is not on the *Handelsblatt*-list. All journals on the *Handelsblatt*-list are included in the database of the American Economic Association (AEA, the U.S.-based scientific association of economists) and can therefore be considered as scientific.[10] This does not mean in turn, that a journal not being on the list cannot be scientific. In doubt, contact your supervisor who is experienced in assessing the quality of a journal.

To locate all journals with content available electronically for you, you can use the electronic journals library of our department (ULB 2019). Most journals are only accessible from the university's network. You can also work at home and access these journals, if you use a so-called vpn-connection to the university's network.[11]

Generally, all published references are citable, if they comply with the scientific standard. Lecture notes, popular newspapers, seminar, bachelor, master or diploma theses are not citable, neither is Wikipedia. Do not cite old working or discussion papers that meanwhile have been published as an article in a journal or in an edited book. Read and cite the published version instead. The working paper and the published version are almost always different due to the peer-review procedure briefly outlined above.

The usage of resources that are scientific only to a limited extent has to be agreed with the supervisor. In case you feel unsure about the quality or relevance of some literature you found, ask your supervisor about it before using it.

Finally, keep in mind that relevance and quality of references are more important than the number of sources that you cite. Do not try to impress your instructor by a long list of references – it may seem implausible that you have actually read everything you cite.

4.2 Scientific language

You can show that you know what you are writing about by explaining the scientific terms and formulas which your text contains. For this purpose, you can use, for example, textbooks on economics, statistics and econometrics or dictionaries of economics. For example, the *New Palgrave Dictionary of Economics* is available in the library.

[10] This judgement is based on information provided by the creators of the journal ranking (Sturm and Haucap 2019b) and AEA (2019).

[11] Check the guide by MLU (2019) on how to install a vpn-connection. We cannot help you with that.

Example of demonstrating the command of scientific language:

> An important question in macroeconomics is why some countries are poor while others are much richer (Acemoglu et al. 2001, p. 1369). These authors test the role of institutions as an explanation for different income levels applying an instrumental variable approach.[12]

Does a student who passed an introductory course in economics know what an instrumental variable approach is? If the answer is 'no' or 'rather not', you should probably explain this term to the reader of your text. You have two options: You can include a footnote with an explanation of the term. In most cases this is a good idea, because in this way the additional explanation does not disturb the flow of your text. If you think that text still 'flows' when you include the explanation in the main text, this is also okay. If your explanation becomes quite long (several lines in a footnote) you might consider to make it part of your main text. This might happen, if you realize that there are additional terms you need to clarify, when explaining the instrumental variable approach. In this case, you might also devote an own section or subsection where you explain the methodologies and concepts which are relevant to understand the research results that you discuss in your paper/thesis.

When using formulas or technical terms without proper explanation, this signals lack of understanding by the student (and will be evaluated accordingly by the supervisor). In research articles, you do not find these additional explanations, because the researcher writes for other researchers, who know the scientific language already. In contrast, you do not write for other researchers. Imagine another fellow student reads your text and he/she should directly understand what you are writing about.

5 Formatting rules

Another important element of a decent seminar paper or thesis is the consistent use of standard formatting rules. Both a seminar paper and a thesis contain the following elements in the given order.

- Title page
- Abstract
- Table of contents, including list of appendices
- List of figures
- List of tables
- List of abbreviations
- List of symbols

  (Note that there is no need to start a new page for each list.)
- Main text (introduction, the main part containing possibly several sections, conclusion)
- Appendices
- Bibliography ("References")

[12] You add the explanation of the 'instrumental variable approach' here. For this explanation, you have to study an econometrics textbook, e.g., Wooldridge (2009). Again, you have to cite correctly those pages you use in your explanation. You should also define the term 'institutions'.

- Statutory declaration

In what follows, the text provides you with detailed information on these points where necessary. The last subsection provides links to the style sheets of each chair applying these guidelines. The style sheets include further details on font size, margins etc. which are individual for each chair.

5.1 Title Page and Abstract

The cover page is unnumbered and contains several important details (e.g., your name and matriculation number). A template for the title page for seminar papers is available via this link: http://wcms.itz.uni-halle.de/download.php?down=53909&elem=3261141 (retrieved 18.09.2023). For bachelor and master theses, you have to use the templates of the examination office: https://pruefungsamt.wiwi.uni-halle.de/abschlussarbeiten/?lang=en (retrieved 18.09.2023). Starting with a new and unnumbered page, you prepare a short abstract which does not contain any references or footnotes. The abstract follows directly the title page of the thesis. The abstract should inform the reader briefly about the topic and the main results only. However, remember that an abstract of the paper is not a substitute for the introduction – restrict it to a maximum of 200 words.

5.2 Table of Contents

In the table of contents, page numbers indicate the start of the corresponding sections. The titles in the table of contents have to be identical to those in the text. To guarantee this, the usage of the automatic table of contents function of your word processor is recommended.

A section never contains only one subsection. It either should contain text only or has to be structured into two subsections at least. You can make use of subsections in a subsection, but do not divide sub-sections into too tiny pieces: three levels are enough. For example: 2 (section), 2.1 (subsection), 2.1.1 (first subsection of subsection 2.1). Further fragmentation is discouraged.

The table of contents should be well-balanced and clearly structured. The extent of a chapter has to be indicated by the number of subtitles, that is, sections that are more important need to be more subdi-vided than less important ones. The titles of the sections should be significant and appropriate to the content.

5.3 List of Appendices, Figures, Tables, Symbols

A seminar paper or thesis must contain additional lists to make the text a coherent self-sustained entity that a reader can access easily.

List of Appendices

Information about the number of appendices, their titles and page numbers have to be indicated in the list of appendices. The list of appendices is part of the table of contents (as in this text).

List of Figures

A list of figures is produced if there are three or more figures in the text. It provides information about their number, title and page number in the text. The list of figures is not part of the table of contents.

List of Tables

The preparation of the list of tables is similar to the preparation of the list of figures. A list of tables is compulsory when there are three or more tables in the text (see these guidelines, for example).

List of Symbols

Mathematical symbols need to be defined/explained in the list of symbols in addition to the explanation in the text. The reader of the thesis needs information about the full meaning of symbols without searching for explanations in the main text. The symbols have to be in alphabetical order. Capital letters are listed first, followed by small letters, Greek letters and other symbols follow at the end. Do not use one symbol for two different things.

5.4 List of Abbreviations

If abbreviations are used that are not traceable in a standard dictionary, they would have to be defined in a separate list in alphabetical order. Because abbreviations can strongly affect the readability, they should be used very carefully.

Table 2: Common abbreviations that need not to be listed

cf.	"confer" (Latin), compare	fig.	figure
Diss.	Dissertation (only in German)	i.e.	"id est (Latin)", that is
Ed.	edition	ibid.	"ibidem (Latin)", in the same place
Eds.	editors	n. a.	no author
e.g.	"exempli gratia" (Latin), for example	n. d.	no date of publication
et al.	"et alii" (Latin), and others	no.	number
etc.	"et cetera" (Latin), and so on	n. p.	no place of publication
et seq.	"et sequens" (Latin), and the following one	p. (pp.)	page(s)
et seqq.	"et sequentia (Latin)", and the following ones	vol.	volume

Note: Researchers are aware of these abbreviations so that students do not need to include them in a list of abbreviations.
Source: self-prepared.

Abbreviations that need not be listed are provided in Table 2. If less than five abbreviations (that need to be explained) are used, a list of abbreviations is not necessary. In any case, that is, with or without a list of abbreviations, you need to explain/spell out the meaning of an abbreviation when you use it for the first time.

5.5 Bibliography

The bibliography follows the text (or appendix) and begins on a separate page. Make sure that you list all sources used, and only these! The reference list should be arranged alphabetically[13] and chronologically (that is: older references first, younger references thereafter), if more than one work of an author or a team of authors is used, respectively. When there is more than one reference by the same author or team of authors of the same year, then distinguish these publications by using lower case letters, e.g., Jones (1995a) and Jones (1995b). References do not include titles like "Prof." or the like – this is true for both citations in the text as well as the bibliographic section. Every reference ends with a period.

There are different types of references: monographs, journal articles, edited books, unpublished PhD-theses and working papers by researchers as well as policy reports by a national/international organization such as the EU. Furthermore, sometimes it is necessary or relevant to refer to newspapers or internet sources. These differences are reflected in the particular style in which an entry appears in the list of references.

You find a section "References" in this document, where you see examples for each of the following cases a) – h), implementing the reference style adopted by the Chair of Economic Growth and Development (Prof. Grieben). Additional details and explanations are provided in the style sheet (see final subsection of this section).

a) Monographs: Example (see section "References" below): Wooldridge (2009)

b) Journal articles: Example: Acemoglu et al. (2001)

c) Edited books: Example: Durlauf et al. (2005)

d) PhD-thesis: Example: Drygalla (2016)

e) Working paper: Example: Albouy (2008)

f) Policy report etc.: Example: OECD (2008)

g) Contributions in non-scientific newspapers / magazines: Example: Ozimek (2014)

h) Internet sources: Example: Krugman (2009)

Avoid the use of internet sources whenever possible. If there are less than five internet sources in your seminar paper or thesis (which should be the rule), include these in your list of references. If there are five or more (which should be the exception), put these references in a separate "List of internet sources", directly following the other references (see this document for an example).

[13] To be more precise: the alphabetical order is arranged by the surname of the first author only. Additional authors of the same reference are not ordered alphabetically, but in the same way they appear in the original publication. In some cases, the order of authors indicates relative contributions to the publication.

5.6 Statutory Declaration

The statutory declaration is the last (non-numbered) page of a thesis and has to be signed personally. Use the template provided by the examination office: https://pruefungsamt.wiwi.uni-halle.de/abschlussarbeiten/?lang=en (retrieved 18.09.2023).

5.7 Further details in the chair's style sheet

Further formatting requirements (size of margins, font size, details on the bibliography) and the corresponding required number of pages (minimum and maximum) are detailed in the style sheet of each chair applying these guidelines. The style sheets can be accessed via the links in Table A1 in the Appendix.

6 Hints on proofreading

It is useful to differentiate between proofreading the content and the language of your text. Finally, hand in the paper or thesis at the required place in the required form (check the style sheet of the chair).

6.1 Content: Does your text make sense?

Print out the paper and read it with a fresh mind. Have you recognized limitations of your argument or the argument of an author, whom you follow? Try to balance opposing arguments from the literature and show limitations of either viewpoint, i.e. give other authors than the one(s) you favor a voice. If you are not doing this, readers of your paper (e.g., your supervisor) will try it. If they detect missing counterarguments or limitations you have not stated, they might consider this as a weakness of the paper. The following questions could help you to improve your paper.

1. Can you explain/write down your main argument in simple words? Can you illustrate the main argument with arrows? (A↑ → B↓, because X). What is the reason/mechanism/evidence (X) underlying your argument? Note: Arrows imply the direction of causality. Be careful. The causality could work in the opposite direction: B↓ → A↑.
2. What theory/evidence (X) do you show to support your claim A↑ → B↓?
3. What is the main counterargument (for example: C↓ → B↓, because Y), which

   a) competes with your argument or

   b) directly contradicts your argument?

   If you do not have a counterargument, find one and refute it, if possible. Otherwise you have to make a concession, that is, admit that your argument is only true, if particular assumptions are made or something similar.

4. Where is the weak point in your argument? Is it possible to eliminate the weak point in your argument with better methods/data? If this is the case – how exactly? If you cannot improve it

in this seminar paper/thesis (e.g., because due to a lack of time), you can explain what you would do/recommend in future work. You can talk about this in your conclusion.

5. Overall, what do we learn from your paper/thesis?
6. Have you explained every conceptual jargon and scientific term? This tells the reader whether the student understands what he or she is writing. However, this does not mean that the student should lose the focus/flow of the main argument by writing whole paragraphs to explain a technical term.
7. Reading only introduction and conclusion again, you should have a good understanding of the paper. If you feel that introduction and conclusion are not a coherent entity, this indicates that you should work over the flow of the paper again.

6.2 Language

Use the spellchecker of your word processor. But software cannot find every problem. Proofreading your paper is essential to eliminate remaining errors.

1. If you think you are done: Print out the complete text and proofread the print-out. Correct all errors you or the spell checker have not detected so far. In the best case, you let your paper rest for at least one day and read it with a fresh mind.
2. For English seminar papers or theses, use a dictionary like the *Oxford Advanced Learner's Dictionary*, or online dictionaries like https://dict.leo.org/englisch-deutsch/ (retrieved 18.11.2019). To improve your English writing style further, including the correct use of punctuation marks, you may want to take a closer look at http://www.bristol.ac.uk/arts/exercises/grammar/grammar_tutorial/index.htm (retrieved 18.11.2019).
3. Although you are writing a scientific text, there is no need for complicated language and long sentences. Try to write simple and short sentences. Split sentences which you understand only after reading two or three times.
4. Check again whether you have followed all the formal guidelines explained in this document and the style sheet of the chair you want to submit to. Is your list of references complete? Are you using the citation style consistently, both in the paper and in the list of references? Is the size of margins correct? Given the formatting requirements, do you deliver enough content or maybe too much (number of pages, see style sheet)?

7 Conclusion

This text introduces the challenge of writing a seminar paper or bachelor/master thesis. We reviewed four essential points. First, students should demonstrate in their academic text that they are able to express research results in their own words. Second, students have to cite academic references appropriately in their writing. This helps to make the text objective, because the reader can understand how a student makes a judgment on a scientific question and thereby develops an own scientific opinion. Furthermore, correct citation is necessary to avoid plagiarism. Next to referencing the text, the third element of a successful paper is the inclusion of additional relevant literature and the use and explanation of scientific language. The final challenge for students is to demonstrate their ability to implement particular formatting rules to make the paper a coherent entity and easily readable.

While the advantage of these guidelines is to remain concise, we cannot do justice to the richness of academic writing or scientific work in general. There are many more detailed introductions to academic writing available, which also contain more detailed discussions of the question 'What is in argument?' (e.g., Booth et al. 2016, particularly ch. 7). With regard to working scientifically, particularly master students would find it helpful to engage in a discussion with their supervisor on how to leave the thesis of the type 'literature review' behind. Maybe you can add an own small theoretical or empirical analysis to your literature review, which is the first step in any case. If you are interested in empirical work, you might want read chapter 19 from Wooldridge (2009) or newer editions. This author explains the basics of empirical analysis to students and thus, provides the natural extension to these guidelines. In recent years, the amount of publicly available data has increased, which supports students in learning and applying empirical methods. Seen in this light, the present text provides a first step towards a solid foundation for deeper scientific work by students.

Appendix: Style sheets

The following Table A1 provides links to word documents with title pages.

Table A1: Links to style sheets

Chair	**URL**
Empirical Macroeconomics	https://iw.wiwi.uni-halle.de/information_for_students/
Growth and Development	https://wachstum.wiwi.uni-halle.de/information_for_students/

Note: URL: Uniform resource locator; retrieved 21.11.2019.
Source: self-prepared.

References

Acemoglu, D., Johnson, S. and Robinson, J. A. (2001): "The Colonial Origins of Comparative Development: An Empirical Investigation." *American Economic Review*, Vol. 91(5), 1369–1401.

Acemoglu, D., Johnson, S., Robinson, J. A. and Yared, P. (2005): "From Education to Democracy?" *American Economic Review: Papers & Proceedings,* Vol. 95(2), 44–49.

Albouy, D. Y. (2008): *The colonial origins of comparative development: an investigation of the settler mortality data*. NBER Working Papers No. 14130, National Bureau of Economic Research.

Booth, W. C., Colomb, G. G., Williams, J. M., Bizup, J. and FitzGerald, W. T. (2016): *The Craft of Research.* 4th ed., Chicago: University of Chicago Press.

Drygalla, A. (2016) *Monetary and fiscal policy analyses in estimated DSGE models*, unpublished PhD-thesis, Martin-Luther-University of Halle-Wittenberg.

Durlauf, S. N.; Johnson, P. A. and Temple, J. R. (2005): "Growth Econometrics." In: Aghion, P. and Durlauf, S. N. (Eds.): *Handbook of Economic Growth*, Amsterdam: Elsevier, Vol. 1A, ch. 8, pp. 555–677.

Glaeser, E., La Porta, R., Lopez-de-Silanes, F. and Shleifer, A. (2004): "Do Institutions Cause Growth?" *Journal of Economic Growth*, Vol. 9(3), 271-303.

Jones, C. I. (1995a): "Time Series Tests of Endogenous Growth Models." *Quarterly Journal of Economics*, Vol. 110(2), 495–525.

Jones, C. I. (1995b): "R&D-Based Models of Economic Growth." *Journal of Political Economy*, Vol. 103(4), 759–784.

OECD (2008): *Biofuel support policies: an economic assessment.* Organisation for Economic Co-operation and Development, https://doi.org/10.1787/9789264050112-en.

Romer, P. M. (1990): "Endogenous Technological Change." *Journal of Political Economy*, Vol. 98(5), S71–S102.

Wooldridge, J. M. (2009): *Introductory Econometrics. A Modern Approach*. 4th ed., Mason, Ohio: South-Western Cengage Learning.

List of internet sources

AEA (2019): "EconLit." American Economic Association, https://www.aeaweb.org/econlit/, retrieved 18.10.2019.

Indiana University (2019a) "The Indiana University Plagiarism Tutorials and Tests." https://academy.sitehost.iu.edu/index.html, retrieved 18.11.2019.

Indiana University (2019b) "How to recognize plagiarism: Tutorials and tests. Hints" https://academy.sitehost.iu.edu/hints.html, retrieved 18.11.2019.

Indiana University (2019c) "How to recognize plagiarism: Tutorials and tests. Patterns of Plagiarism." https://academy.sitehost.iu.edu/plagiarismPatterns/, retrieved 18.11.2019.

Krugman, P. (2009): "How Did Economists Get It So Wrong?" *The New York Times Magazine*, 02.09. 2009, http://www.nytimes.com/2009/09/06/magazine/06Economic-t.html, retrieved 01.09.2015.

MLU (2019): "VPN (Virtual Private Network)." Martin-Luther University of Halle-Wittenberg, https://www.itz.uni-halle.de/dienstleistungen/virtual_private_netwok/, retrieved 18.10.2019.

Ozimek, A. (2014): "Why Do Economists Disagree So Much about the Minimum Wage?" *Forbes*, 13.01.2014, http://onforb.es/L1Sodm, retrieved 20.08.2015.

Statistische Ämter des Bundes und der Länder (2019): *Tabelle 82111-01-05-4. Bruttoinlandsprodukt/Bruttowertschöpfung nach Wirtschaftsbereichen - Jahressumme - regionale Tiefe: Kreise und krfr. Städte*. www.regionalstatistik.de, retrieved 25.10.2019.

Sturm, J.-E and Haucap, J. (2019a) (eds.): "Journal weights list." https://forschungsmonitoring.org/, retrieved 18.10.2019.

Sturm, J.-E and Haucap, J. (2019b) (eds.): "Journal weights list: description." https://forschungsmonitoring.org/Description_VWL_Main_Journal_weights.pdf, retrieved 18.10.2019.

Turnitin (2017): "What is Plagiarism?", Turnitin LLC, https://www.plagiarism.org/article/what-is-plagiarism, retrieved 18.11.2019.

ULB (2019): "Elektronische Zeitschriftenbibliothek." Universitäts- und Landesbibliothek Sachsen-Anhalt, http://ezb.uni-regensburg.de/fl.phtml?bibid=ULBH&colors=7&lang=de&notation=Q, retrieved 19.11.2019.