

Planning	Learning Step 1	Learning Step 2	Learning Step 3	Learning Step 4	Learning Step 5
Topic selection and problem	I know that an academic paper addresses a topic that is both relevant and in need of a solution. I am acquainted with strategies for selecting and narrowing down topics, and I must name a specific problem statement.	I understand that I must explain the relevance of a topic and, based on that, formulate a specific problem statement.	I apply strategies to find a suitable topic and narrow it down. I develop a concrete problem statement and justify its relevance.	I identify a research gap independently and contextualize it thematically. Then, I determine how addressing the gap contributes to the current research discourse.	
Research question and hypothesis	I know the terms "research question" and "hypothesis" and that they are central to certain types of academic text.	I understand the terms "research question" and "hypothesis" and elaborate on their significance for my academic writing.	I analyze a specific problem statement and, based on this, develop an appropriate research question and/or formulate hypotheses.	I conceptualize my work in a manner that logically connects the research question and/or methodically evaluates my hypotheses.	I develop sub-questions or and work steps from a research question. If necessary, I develop verifiable indicators from my hypotheses.
Terms and definitions	I know that terms can have various meanings and thus must be named clearly in academic texts. I am acquainted with the components of a definition and the distinction between a definition and a working definition.	I reflect on contradictory definitions in the literature and sources. I understand that I need to commit to a (working) definition and justify it.	When necessary, I create my own academically substantiated definition based on existing terms and concepts.	I classify conflicting term definitions within their disciplinary and historical contexts. I compare and weigh them against one another and synthesize them into a new working definition in relation to my research question.	

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Time planning	I know that scientific work necessitates a structured approach, breaking down into individual steps, and must therefore be sketched out accordingly.	I understand that the various steps of scientific work take different amounts of time. I am familiar with several methods of project and time management.	I estimate how long each phase of the work will take and organize my work so that I can complete it within a set timeframe. I apply methods of project and time management.	I conceptualize detailed timelines for complex scientific projects that span a longer period of time.	
Project sketches and exposés	I am familiar with what a project outline or a brief concept represents. I know its components and that it can be elaborated into a detailed proposal for larger projects if needed.	I understand the benefits of project outlines or brief concepts, as well as exposés, for the preparation of scientific work.	I create a project outline, a brief concept, or an exposé.		

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Reception	Learning Step 1	Learning Step 2	Learning Step 3	Learning Step 4	Learning Step 5
Defining the information need	I know that I must clarify my information needs before starting a search. To do this, I outline the necessary information for my topic as well as the associated key terms. I know that to meet my information needs, I require multiple sources.	Based on the information available, I define the key terms relevant to my topic and explain their importance to my work.	From my key terms, I develop search terms. I continuously check if my information needs change and adjust the search terms accordingly.	I derive new information needs even from complex situations or when facing contradictory information.	
Research	I know the difference between everyday and academic research. I know that there are academic research tools (library catalogs, specialized databases) available. I am familiar with reference works that can help me understand unfamiliar terms and definitions.	I understand that I need to define specific search terms to find relevant sources in the university library and in relevant databases.	I apply simple search strategies (database searching with the help of filters, synonyms, combining search terms, truncation, links, etc.) to make my research more efficient.	I convey my skills in more advanced search strategies, such as using archives and international databases, and making direct contact with experts, to obtain more varied results.	Based on my research, I create a systematic overview of the literature related to my topic.

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Source evaluation	I know that it is important to evaluate sources carefully. I am acquainted with the quality criteria for assessing (academic) sources, such as credibility, quality, recency, and relevance. I know that these criteria can be weighted differently depending on the topic.	I can explain which criteria for evaluating sources are relevant to my topic.	I apply evaluation criteria according to the research goal and select and sort sources accordingly.	I check my sources for any contradictions or misinformation and compare them with other sources.	
Reading	I know various reading techniques and am aware that their application depends on the reading and information goals.	I can define my reading and information goals.	I choose appropriate techniques to meet my reading objectives and use them to specifically work through the literature at hand.	I evaluate my reading results and adjust my strategy if necessary. If needed, I acquire additional reading techniques for this purpose.	
Excerpting	I know what an excerpt is and that there are programs for literature and knowledge management that help in creating an excerpt.	I understand that excerpts serve the purpose of research documentation and knowledge management. I explain how digital tools can assist in this process.	I create (digital) excerpts to secure and manage relevant information and to document cross-connections. I organize my knowledge systematically in a literature and knowledge management system.		

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Knowledge Organisation	I know that I must structure the information I have read and organize it appropriately for my work.	I understand the function of various digital and analog methods for organizing knowledge and can explain them.	I choose a suitable method of knowledge organization for my respective work and assign the knowledge found to the appropriate places in my work.	I link my knowledge bases and adapt my literature and knowledge management system as needed to meet new requirements.	
Connecting to the current state of research	I can name the fundamental literature relevant to my field.	I understand the state of the literature in my field and can also elucidate some in-depth knowledge areas based on the current state of research in my learning area.	I critically analyze my level of knowledge and, if necessary, bring myself up to date with the latest research in one or more specialty areas.	I link the knowledge in my area of expertise with other knowledge bases and place it within a broader context by also incorporating international knowledge resources. I convey my findings to new contexts.	I contribute to the current (international) discourse by generating new knowledge through (empirical) investigations and making it available.

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Research & Methods	Learning Step 1	Learning Step 2	Learning Step 3	Learning Step 4	Learning Step 5
Conceptual foundations	I know that in every academic discipline there are both methodological as well as scientific and epistemological basic concepts.	I understand essential methodological as well as scientific and epistemological basic concepts of my field.	I use both the essential methodological as well as scientific and epistemological terms of my field.	When necessary, I convey methodological, scientific, or epistemological terms from other disciplines to the content of my work.	I develop new methodological, scientific, or epistemological terms when my research interest requires it.
Selection of research methods	I am familiar with different types of academic research methods (literature/theoretical works; empirical studies; constructive works) and know that I must apply a research method.	Together with my supervisor, I reflect on which research method is suitable for my work.	I independently plan the use of the research method(s) and justify my selection.		
Application of research methods	I know the most common research methods in my field.	I understand the steps of a research method and can explain them.	I apply research methods. I develop and implement solutions that align with the current state of science.	I classify research results by critically interpreting and explaining them.	I further develop a method if needed and justify the changes.

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Research process	I know the general process of a research project from planning to the research report.	I can explain the process using someone else's research project as an example.	I break down my upcoming research project into steps and create a plan using relevant examples. I organize the resources and carry out the project under guidance.	I classify my research findings by explaining and critically interpreting them. Furthermore, I connect the results of my research project with the results of other (sub-)projects.	I create a research report and possibly contribute to its publication.
Conducting one's own research	I know what criteria a substantial research project must meet. I am aware of the conditions under which my/the research project I am responsible for will take place.	I define realistic research goals that are achievable within the given framework conditions with my research project.	I develop a research plan and design my project so that it can be completed successfully. I carry out my research project independently.	I link the findings of my research to current academic discussions. I work, where appropriate, in interdisciplinary and international contexts.	I publish a research report and am responsible for the project to the funding party. I guide other individuals in the context of research and development work and support their further scientific qualifications.

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Writing	Learning Step 1	Learning Step 2	Learning Step 3	Learning Step 4	Learning Step 5
Writing process	I know that writing is a process that can be learned and customized to one's individual needs.	I understand the different phases of the writing process and am able to reflect on them.	I independently organize my writing process.	I classify any difficulties that may arise in the writing process and develop appropriate solutions.	
Writing strategies	I know that there are different approaches to a writing project and different writing strategies.	I understand the purpose of using various writing strategies and reflect on my own writing behavior.	I apply different writing strategies suitable to my writing behavior.		
Formal and content-related criteria	I know that I must meet certain formal and content-related criteria in academic writing.	During the writing process, I continuously reflect on my approach concerning the given content and formal criteria.	I apply the given formal and content-related criteria to revise my writing project.	I review the outcomes of my writing project and transfer the results to subsequent writing projects.	
Feedback and revision	I know that discussing my writing project with peers and lecturers is beneficial for my writing actions.	I actively seek feedback from peers or instructors and reflect on it.	I extensively develop my academic text based on feedback and reflection.	I convey the insights gained from feedback and reflection to future academic writing projects. I seek feedback from experts for subsequent writing projects.	

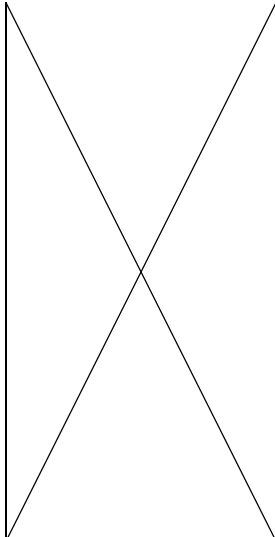
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Structure and text organization	I know that a academic paper must be structured in content and that the individual contents logically build upon each other. I am familiar with standardized structuring patterns for my field.	I understand and can explain the structure of academic papers.	I use standard outlines and based on them, develop a structure for my academic paper.	I independently conceptualize an outline considering, for example, the logic of the content and potential readers.	I develop an outline independently, considering the objectives to be conveyed and the conventions of the genre.
Content and Subject Matter Design	I know that my text contents must be aligned with my research question/problem statement.	I explain why certain content is relevant to my text.	I create a text with relevant contents aligned with my research question/problem statement.	I convey my acquired knowledge to the required genre of text.	
Genre-Specific Requirements	I know that there are different types of texts (e.g., term papers, essays, reports) that serve different purposes and are common in different academic disciplines.	I understand the characteristics of specific genres within my academic discipline.	I refer to external texts and use them as templates. Then, I use them to create the required text.	I independently conceptualize my text and incorporate the characteristics of the required genre into it.	

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Visualizing & Presenting	Learning Step 1	Learning Step 2	Learning Step 3	Learning Step 4	
Visualizations in texts	I am familiar with general criteria for visualizations (e.g., clarity, understandability) in texts and, if applicable, subject-specific criteria. I know I must make a connection to the visualizations within the text.	I reflect on the content of my work and select suitable visual formats considering the discipline and the readers.	I create simple visualizations that meet general and discipline-specific criteria, integrating them appropriately into the text.	I conceptualize complex visualizations that meet both general and subject-specific criteria and integrate them appropriately into the text.	
Visualizations in presentations	I know the general criteria for visualizations (e.g., clarity, understandability) in presentations and, if applicable, subject-specific criteria. I understand that a presentation should establish a connection between what is said and what is shown.	I reflect on the goals and content of my presentation and choose suitable visualizations considering the discipline and the audience.	I create simple visualizations that meet the general and discipline-specific criteria and integrate them appropriately into the presentation.	I conceptualize complex visualizations that meet both general and subject-specific criteria and integrate them appropriately into the presentation.	

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Use of presentation techniques and media	I am familiar with various presentation techniques (slide presentation, free speech, flip chart, etc.) and media (e.g., presentation software) and aids (manuscripts, cue cards). I know that a scientific presentation must meet certain criteria concerning the audience and the discipline.	I understand in which speaking situations certain presentation techniques or media are appropriate and select these and my aids considering the audience and the discipline.	I design my presentation using techniques and media suitable for the situation, and if necessary, I employ appropriate aids.	I adapt my presentation flexibly to the audience's reactions.	
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Good Scientific Practice	Learning Step 1	Learning Step 2	Learning Step 3	Learning Step 4	Learning Step 5
Values and norms	I know that scientists should consider and uphold the values and norms of academic work. academic integrity.	I understand the values and norms of academic work, and I know how to apply them to the independent planning, implementation, evaluation, and application of scientific research.	I commit myself to uphold the values and norms of good scientific practice.	I regularly evaluate my behavior and adjust it to changing circumstances and practices, such as the influence of new technologies.	I engage with other scientists in discussions about the values and norms of academic work. Through this, we initiate a learning and development process in which we support each other.
Honest handling of information	I know that I must refer to verifiable and reliable sources in my work.	I understand that I must apply the rules of good scientific practice (e.g., transparency and copyright) to how I handle information.	I handle (others') intellectual property responsibly.	I can classify the ethical, legal, and socio-economic problems associated with dishonest handling of information.	
Avoiding plagiarism	I know what plagiarism is and that there are various types of plagiarism as well as different strategies for avoiding it.	I understand why plagiarism violates good scientific practice (due to honesty, transparency, fairness, etc.) and that I must identify the origin of information.	I implement strategies to prevent plagiarism and organize my work process to be less susceptible to unintentional plagiarism.		

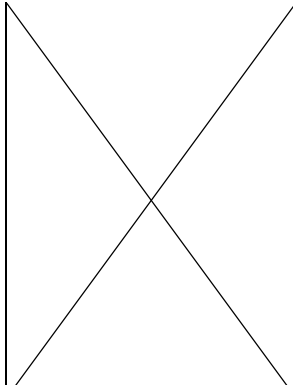
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Citation	I know a commonly used citation style in my discipline. I can distinguish between direct and indirect quotations.	I understand why conventions for structure, style, and citation vary across different types of texts. I deliberately choose the appropriate citation style.	I can correctly apply various citation styles. I can incorporate both direct and indirect quotes into my text so that it is always clear which ideas are not my own.		
Authorship	I know that authorship includes all contributors to a publication.	I understand that I must list all authors who have written the source in the bibliography [exception: et al.].	I am familiar with different models of naming authors in collaborative writing and can accurately apply them.	When co-authoring a text with others, we convey the general rules of authorship to our collaboration.	
Dealing with Academic Misconduct	I know that academic misconduct can take various forms, such as the unmarked adoption of intellectual property or the falsification of data.	I can recognize/explain the different types of academic misconduct if I encounter them in practice.	I adhere to the procedure for dealing with academic misconduct as prescribed by my institution.		
Use of Artificial Intelligence	I know that the use of AI can be compatible with the principles of good scientific practice and that its permissibility depends on the specific context (requirements of the university, a teacher, a journal, etc.).	I understand why different actors in the scientific community may have various assessments regarding the permissibility of using AI and why there can be no universal, permanent regulations (e.g., labeling).	Within the permissible scope, I use AI for my academic papers, provided it supports my work process.		

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Critical Thinking	Learning Step 1	Learning Step 2	Learning Step 3	Learning Step 4	Learning Step 5
Arguing and debating	I know that objectivity and intersubjectivity are key values in academic argumentation and that I must continually critically examine my findings by engaging with other positions.	I define key terms, explain my statements, and support my position with arguments.	I deliberately analyze alternative viewpoints. In doing so, I also anticipate possible objections and counterarguments and address them.	I compare the different positions and arguments based on scientific criteria. I evaluate the results and categorize them in relation to my statements, and if necessary, I revise my reasoning.	I openly discuss my insights in disciplinary and interdisciplinary debates. I reflect on the possible limitations of my field in addressing the question. I generate new insights through the integration of knowledge and methods from other scientists and disciplines.
Dealing with external statements	I know that I cannot uncritically incorporate statements from others into my work, but instead must assess their plausibility and point out any obvious errors and inconsistencies.	When reading a text, I reflect on whether the key terms are adequately defined and if the argument is coherent. If I adopt any statements from the text, I clarify any gaps or inconsistencies.	I analyze external claims and review their data basis as well as how they were derived.	I evaluate the academic validity of statements based on relevant literature and, if appropriate, through academic methods.	I generate new ideas from external claims and substantiate them with further arguments.

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Analyzing and drawing conclusions	I know that scientific analyses and comparisons must be carried out based on predefined criteria and methods. I am also familiar with different types of scientific reasoning, such as deductive and inductive reasoning.	Based on given criteria, I define sub-aspects of a subject of investigation and understand that I must present these systematically.	I search the relevant literature for suitable criteria to analyze my subject of investigation. I apply these criteria and derive well-founded conclusions from the results.	I adapt an existing analytical framework to fit a specific context. I compare my results and conclusions with those of similar studies and discuss similarities and discrepancies.	
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Source:

"Referenzrahmen Wissenschaftliches Arbeiten – WISAR" from PARWIN (Promoting Academic Research and Writing – an International Network). Date: 10/2024.

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