
lernOS Zettelkasten

Learn to work with the Zettelkasten

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 lernOS^{cc}

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Inhaltsverzeichnis

1 About lernOS	4
1.1 Lifelong learning and knowledge work	4
1.1.1 Knowledge work	6
1.1.2 Productivity of knowledge work	8
1.2 Your lernOS Canvas - Overview of knowledge and learning needs	9
1.3 lernOS Flow - Workflow for modern working and learning	11
1.4 lernOS Workplace - Your Learning Environment and Knowledge Workplace	13
1.5 lernOS Memex - the “2nd Brain” of the learners	16
2 Personal Knowledge Management Basics	16
2.1 Links to further information on the subject of note boxes or personal knowledge management (PKM)	19
3 Learning path	20
3.1 The learning objectives of the Zettelkasten pathway	20
3.2 Week 0 - Circle Setup	20
3.2.1 Theory	20
3.2.2 Guiding questions you can answer for yourselves	22
3.2.3 Exercises	23
3.2.4 Reflection part	23
3.2.5 Learning Objective	23
3.3 Week 1 - Goal definition & appointment with yourself	23
3.3.1 Goal definition	24
3.3.2 Theory	29
3.3.3 Exercises	32
3.3.4 Reflection section	32
3.3.5 Learning Objective	32
3.4 Week 3 - Get to know notes	33
3.4.1 Theory	33
3.4.2 Exercises	37
3.4.3 Reflection part	37
3.4.4 Learning Objective	37
3.5 Week 4 - Create first notes	37
3.5.1 Theory	37
3.5.2 Exercises	39
3.5.3 Reflection part	39

3.5.4	Learning Objective	39
3.6	Week 5 - Create permanent notes	39
3.6.1	Theory	39
3.6.2	Exercises	40
3.6.3	Reflection section	41
3.6.4	Learning objective	41
3.6.5	Theory	42
3.6.6	Exercises	44
3.6.7	Reflection section	45
3.6.8	Learning goal	45
3.7	Week 7 - Pit stop	46
3.7.1	Theory	46
3.7.2	Exercises	46
3.7.3	Reflection part	47
3.7.4	Learning objective	47
3.8	Week 8 - Knowledge retrieval	47
3.8.1	Theory	47
3.8.2	Exercise	48
3.8.3	Reflection section	48
3.8.4	Learning Objective	49
3.8.5	Theory	49
3.8.6	Exercises	50
3.8.7	Reflection section	51
3.8.8	Learning Objective	51
3.9	Week 10 - Thinking in a note box	52
3.9.1	Theory	52
3.9.2	Exercises	54
3.9.3	Reflection part	54
3.9.4	Learning Objective	54
3.10	Week 11 - Find your workflow	54
3.10.1	Theory	54
3.10.2	Exercises	55
3.10.3	Reflection section	56
3.10.4	Learning Objective	56
3.11	Week 12 - Retrospective	57
3.11.1	Theory	57
3.11.2	Exercises	57
3.11.3	Reflection section	58

3.11.4 Learning goals	58
4 Appendix	58
4.0.1 Control characters	59
4.0.2 Advanced mark-down syntax	60
4.1 Change history	63

1 About lernOS

lernOS is a method of self-organization for people living and working in the 21st century. To be successful today, you need to be constantly learning, organizing and developing. No one else is responsible for this process. You have to take care of it yourself (self-directed, lifelong learning).

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1.1 Lifelong learning and knowledge work

We are currently in a very dynamic transition from an industrial to a knowledge society²: Characteristic of this is that rules and norms are continuously questioned through learning processes (see also Characteristics of the knowledge society³).

In this society, we as individuals can actually only be successful through learning and contribute to the well-being of all together with others.

¹<https://creativecommons.org/licenses/by/4.0/deed.de>

²<https://de.wikipedia.org/wiki/Wissensgesellschaft>

³https://www.researchgate.net/publication/283061140_Merkmale_der_Wissensgesellschaft



Author: geschmacksRaum®

Learning is the intentional or incidental acquisition of knowledge or skills. This learning process leads to relatively stable changes in behavior, thinking or feeling, based on experience or new knowledge.

In 1996, the Delors Report⁴ of the European Commission drew an overall picture of lifelong learning ("learning throughout life") and named the four pillars that should be integrated into education and training in particular:

- **Learning to know** - a broad general knowledge with the possibility to deepen a small number of topics.
- **Learning to do** - to acquire not only professional skills, but also the competence to deal with many situations and to work in teams.
- **Learning to be** - to develop one's own personality and to be able to act with growing autonomy, judgment and personal responsibility.
- **Learning to live together** - by developing an understanding of other people and an appreciation of interdependence.

But there are also very practical reasons that make lifelong learning necessary for you. As you can see from the half-life of knowledge⁵ graph, some types of knowledge quickly become outdated, making continuous learning simply necessary. Even if areas such as school knowledge remain reasonably stable, the need to learn new things - especially in the technology and IT sectors - is particularly great.

For the citizens of a society, this means that even after completing their education through school and university, they should continue to learn in order not to lose touch. This learning process, which extends from birth to death, is referred to as lifelong or lifelong learning⁶.

Until the first education, in most cases not only the parents but also the state take care of learning and

⁴https://en.wikipedia.org/wiki/Delors_Report

⁵http://www.online-lehrbuch-bwl.de/lehrbuch/kap3/oe_le/oe_le.pdf

⁶https://de.wikipedia.org/wiki/Lebenslanges_Lernen

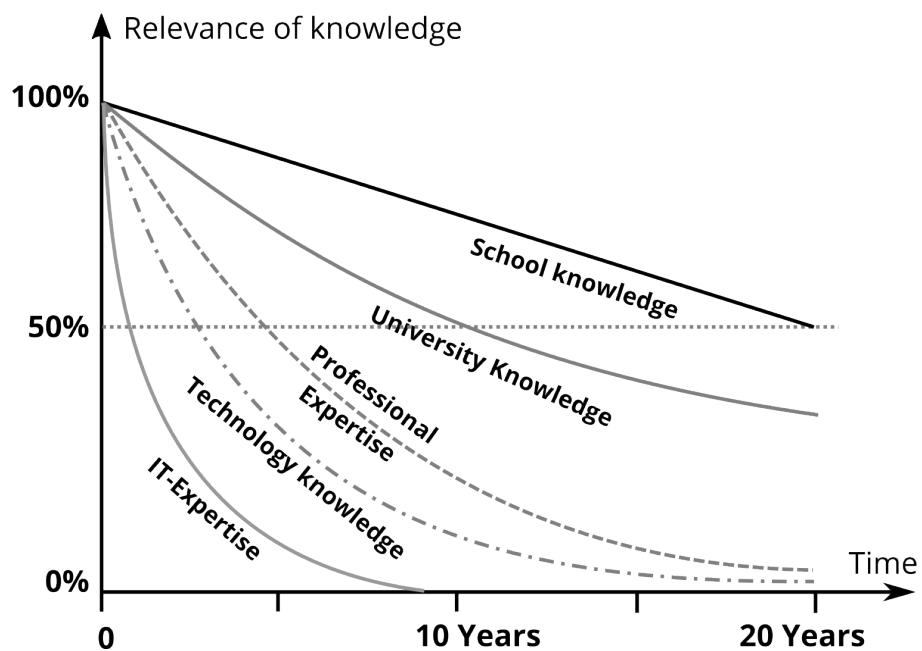


Abbildung 1: Half-life of knowledge (from Schüppel, J.: Wissensmanagement. Organizational learning in the area of conflict between knowledge and learning barriers, own presentation.)

education. After that, you have to organize it for yourself⁷.

Author: Daniel Berkmann

1.1.1 Knowledge work

In his book *Landmarks of Tomorrow*, Peter Drucker points to a change in the world of work toward knowledge-intensive work tasks, or knowledge work⁸, as early as the late 1950s. The knowledge worker

⁷<https://de.wikipedia.org/wiki/Selbstorganisation>

⁸https://en.wikipedia.org/wiki/Knowledge_worker

is characterized by the fact that he knows better about the work task and the necessary knowledge than the managers of the organization, and therefore - in contrast to Taylorism⁹ or Scientific Management¹⁰, in which there is a separation between head work and manual work - organizes himself to the greatest possible extent.

The organizational sociologist Hellmut Willke defines knowledge work¹¹ as activities such as communication, transaction and interaction, which are characterized by the fact that they require knowledge that has not been acquired once in life, for example through experience, initiation, teaching, specialized training or professionalization, and can then be continuously applied. Instead, it is precisely the knowledge that emerges in the lifelong learning process that is characteristic and action-guiding for knowledge work. For this reason, relevant knowledge is not static, but should be

1. Continuously revised,
2. permanently regarded as capable of improvement
3. in principle not be regarded as truth, but as a resource, and
4. be inseparably coupled with non-knowledge.

Obviously, knowledge work involves risks, because what is valid today may already be invalid tomorrow.

The following activities are considered particularly knowledge-intensive, according to the study Activities and occupational requirements in knowledge-intensive occupations¹²:

- Research
- Developing
- Researching
- Documenting
- Training
- Teaching
- Organizing other people's workflows (yes, managers and executives are knowledge workers too :))

If your workday consists largely of one or more of these activities, you can count yourself among the knowledge workers and you belong to the core target group of this guide.

⁹<https://de.wikipedia.org/wiki/Taylorismus>

¹⁰https://de.wikipedia.org/wiki/Scientific_Management

¹¹https://www.researchgate.net/publication/41011087_Organisierte_Wissensarbeit

¹²<https://lit.bibb.de/vufind/Record/DS-131131>



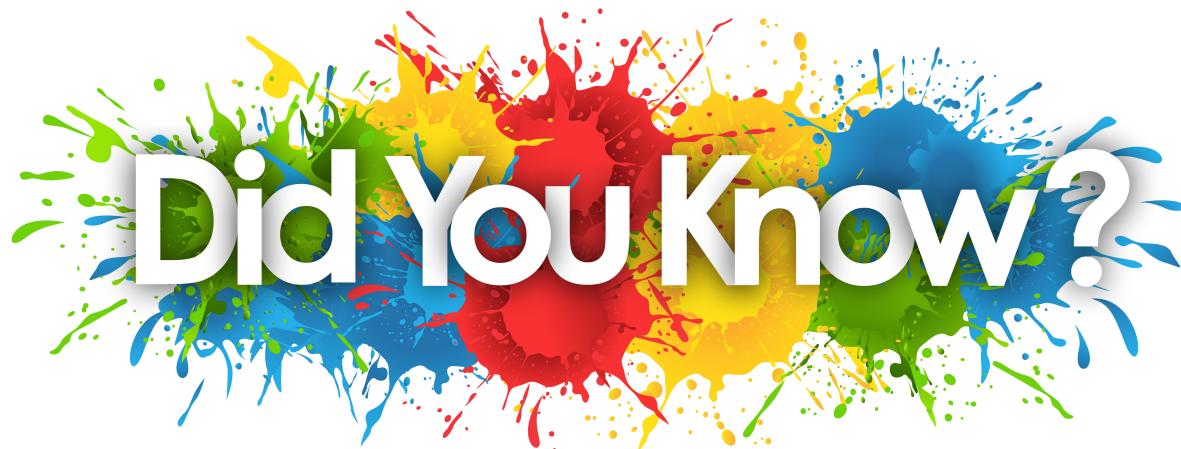
Author: timothyh

1.1.2 Productivity of knowledge work

Productivity](<https://de.wikipedia.org/wiki/Produktivit%C3%A4t>) is classically defined as the ratio of products produced to the factors of production required to produce them. Peter Drucker, in the book Management Challenges for the 21st Century, summarizes knowledge worker productivity in six factors:

1. knowledge worker productivity requires that the first thing we ask ourselves is **what is the task?**
2. knowledge work requires us to transfer responsibility for productivity to individual knowledge workers; to do this, we must give them the benefit of the doubt, because **knowledge workers must manage themselves.** To do this, there must be autonomous room for maneuver.
3. **Continuous innovation** is a part of the work that is the task and responsibility of knowledge workers.
4. knowledge work goes hand in hand with **continuous learning** on the one hand and **continuous teaching** by knowledge workers on the other hand.
5. the **productivity of the knowledge worker** is primarily not a question of the quantity of the results. The devil is often in the details, so quality is at least as important.
6. in conclusion, the productivity of knowledge workers requires that **knowledge workers are an “asset”** and not a “cost factor” and are treated accordingly. Knowledge workers are consequently especially productive when they want to work for the organization and do not choose one of the many elective options.

Dan Pink's well-received TED talk demonstrates precisely this connection of the importance of autonomy, continuous learning (mastery), and independent exploration or figuring out a relevant work task (purpose) that characterizes work in the 21st century On the Surprising Science of Motivation¹³.



Author: Nali

1.2 Your lernOS Canvas - Overview of knowledge and learning needs

With this canvas you can plan your learning and keep a good overview, so you don't forget anything important. The visual structure also makes it easier for you to review the individual components that make up your current knowledge and learning needs and to match existing resources with your learning needs. A picture is worth a thousand words! For example, you can use it to work on several areas at the same time.

Alex Osterwalder was the first to come up with the idea for a lernOS Canvas. He also developed the [Business Model Canvas (https://en.wikipedia.org/wiki/Business_Model_Canvas)], which is used for the development of business models. Both follow the same basic structure and should be filled out by you as a start. This way you get a suitable overview. The lernOS Canvas¹⁴ **ProTip: Be flexible and work with sticky notes that you can use at any time as needed.

In the upper part of the canvas you can enter your name and the date of creation or last change. If you want to work with the canvas electronically, you can copy it e.g. into OneNote or a digital whiteboard. For the first filling of the Canvas, you can ask yourself the following questions, for example:

- **Purpose & Purpose:** What do you live for? What do you want to achieve in your life?
- **Goals & Key Results:** What are your goals for the next 12 weeks? What are the measurable outcomes to the goals?

¹³<https://www.youtube.com/watch?v=rrkrvAUbu9Y>

¹⁴<https://raw.githubusercontent.com/cogneon/lernos-zettelkasten/main/en/src/images/lernOS-Canvas-for-you-Canvas-de.png>

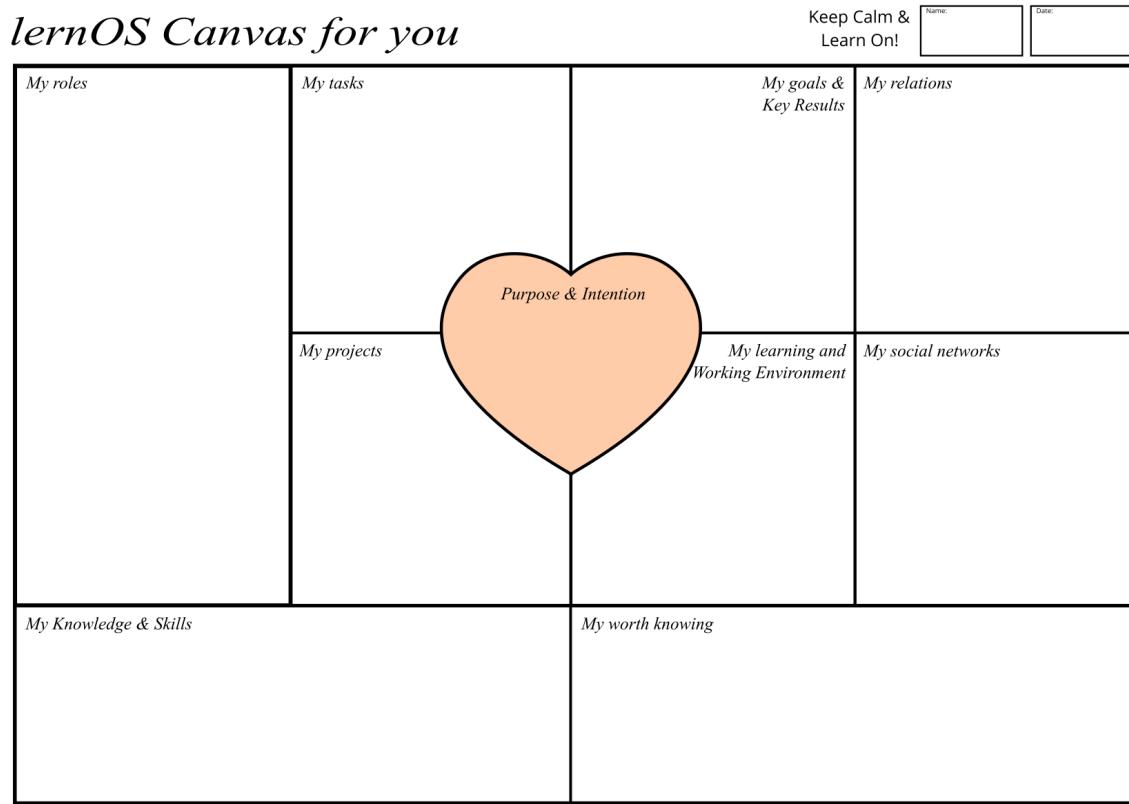


Abbildung 2: lernOS Canvas

- **My Roles:** What are your current roles? What are the goals that flow from them?
- **My Tasks:** What are your current tasks? What are the goals that result from them?
- **My Projects:** What are your current projects? What are the goals that result from these?
- **My Social Networks:** What internal and external social networks (digital and analog) help you network?
- **My Learning and Working Environment:** What does your learning and working environment look like (infrastructure, content, tools, methods, etc.)?
- **My Knowledge & Skills:** What knowledge areas and skills are important to your goals, roles, tasks, and projects? What do you still need to learn?
- **My Knowledge Assets:** What knowledge assets (documents, checklists, videos, etc.) do you have? Which of these can you offer to your network?

1.3 lernOS Flow - Workflow for modern working and learning

Flow]([https://de.wikipedia.org/wiki/Flow_\(Psychologie\)](https://de.wikipedia.org/wiki/Flow_(Psychologie))) refers to the feeling of a mental state experienced as blissful, in which you are concentrated and completely absorbed in an activity. In flow, there is a good balance between the demands of the activity and one's own abilities, so that there is neither overload nor underload. In order to bring concentration and focus together in our fast and complex world of life and work, you need a good system for this, with which you are able to organize yourself.

For the lernOS Flow are therefore on 13-week cycles, which are called **lernOS Sprints** in the style of Scrum¹⁵. Each sprint begins with planning and goal setting (week 0) and ends with a retrospective (week 12). The four quarters of a year are a good rhythm, but you can adapt this to your preference.

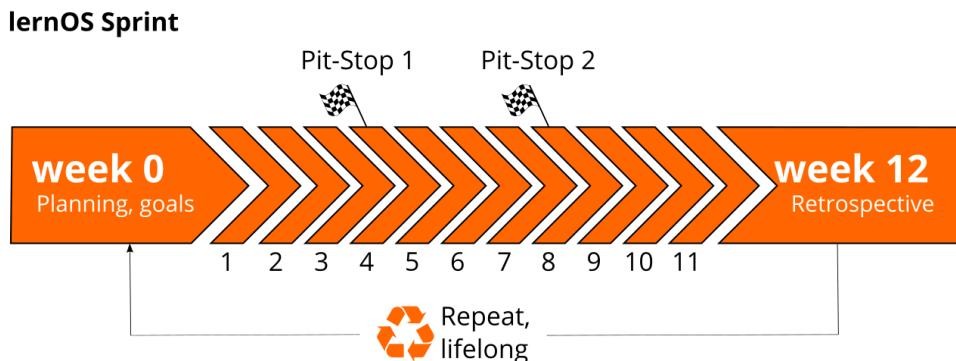


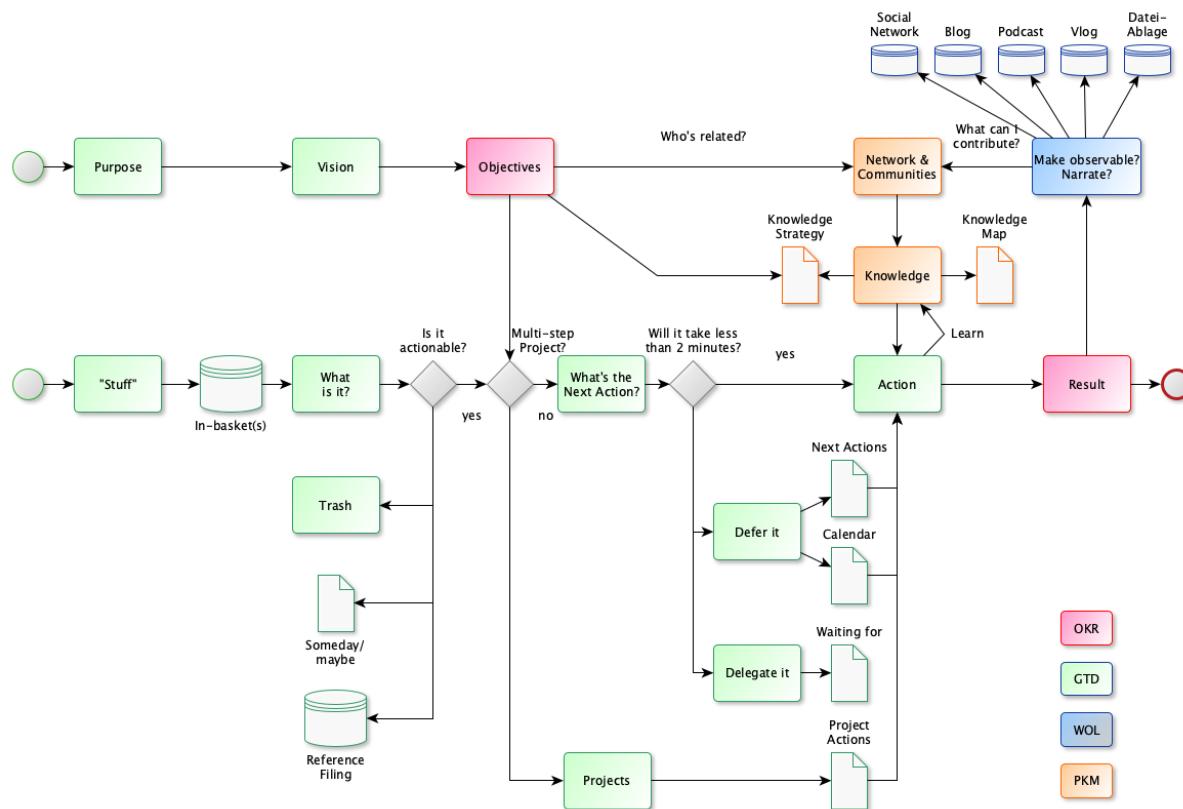
Abbildung 3: lernOS Sprint

¹⁵<https://scrumguides.org>

The lernOS Flow is a workflow that knowledge workers and lifelong learners can use for their self-organization. For this purpose, practice-proven methods and approaches are used:

1. **Objectives & Key Results (OKR)** for goal-oriented and focused work and learning by defining learning objectives and desired outcomes (see also OKR¹⁶ at Google).
2. **Getting Things Done (GTD)** for productive and stress-free working and learning by structuring self-organization through a 5-step process (see also GTD¹⁷ by David Allen).
3. **Working Out Loud (WOL)** for openly sharing work results across the network and telling back-stories (see also WOL Definition¹⁸ by Bryce Williams, WOL Circle Guides¹⁹ by John Stepper).

In the lernOS Flow diagram, you can see the elements from each method by the color coding (OKR: red, GTD: green, WOL: blue):



The image is best read from left to right. There are two possible starting points (green circles) and one end point (red circle). With the lower starting point, one is more concerned with the short-term and operational handling of knowledge and learning. The upper starting point maps the long-term and

¹⁶<https://rework.withgoogle.com/guides/set-goals-with-okrs/steps/introduction/>

¹⁷<https://gettingsdone.com>

¹⁸<https://thebryceswrite.com/2010/11/29/when-will-we-work-out-loud-soon/>

¹⁹<https://workingoutloud.com/de/fur-dich>

strategic perspective (see also GTD - The 6 Horizons of Focus²⁰).

ProTip: if you work privately or professionally with Microsoft 365, you will find the Microsoft 365 edition of the lernOS flow in the appendix.

1.4 lernOS Workplace - Your Learning Environment and Knowledge Workplace

When thinking of the modern learning and knowledge workplace, many immediately think of the “Digital Workplace” or the “Digital Classroom” with its many digital tools. That is why this chapter is preceded by the following quote:

A fool with a tool is still a fool (Ron Weinstein)

Mindset, skillset & toolset instead of just toolset: When designing your own learning environment or knowledge workplace, it is important to take a balanced view of three areas:

- **Mindset** - What is my mindset towards learning and how does that show up in my learning environment/knowledge workplace (see also Growth Mindset by Carol Dweck, Open Mindset by Gary Hamel)?
- **Skillset** - how good are my competencies and skills related to learning (see also (Framework for 21st Century Learning²¹, DigiComp 2.1 Framework²²)?
- **Toolset** - do I use contemporary tools, methods and formats in my learning and work processes (s.a. Web 2.0²³, Agile Methods²⁴)?

Your **lernOS Workplace** is a very individual matter, so you should design it as well as possible according to your needs. As a rule, this place is not only in one place, but in several. For students, this can be the school and their own room, for example. In times of distributed and mobile work, any place can be your learning and working place.

With the following template based on the Seek>Sense>Share Frameworks²⁵ by Harold Jarche you can describe your current lernOS Workplace, share your thoughts about it and develop ideas for the future:

This also applies to the digital part of the personal learning environment: all learners have to choose and set up appropriate tools.

²⁰<https://gettingthingsdone.com/2011/01/the-6-horizons-of-focus/>

²¹<http://www.p21.org/our-work/p21-framework>

²²<https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/digcomp-21-digital-competence-framework-citizens-eight-proficiency-levels-and-examples-use>

²³<https://www.oreilly.com/pub/a/web2/archive/what-is-web-20.html>

²⁴[https://de.wikipedia.org/wiki/Agilit%C3%A4t_\(Management\)](https://de.wikipedia.org/wiki/Agilit%C3%A4t_(Management))

²⁵<https://jarche.com/2014/02/the-seek-sense-share-framework/>

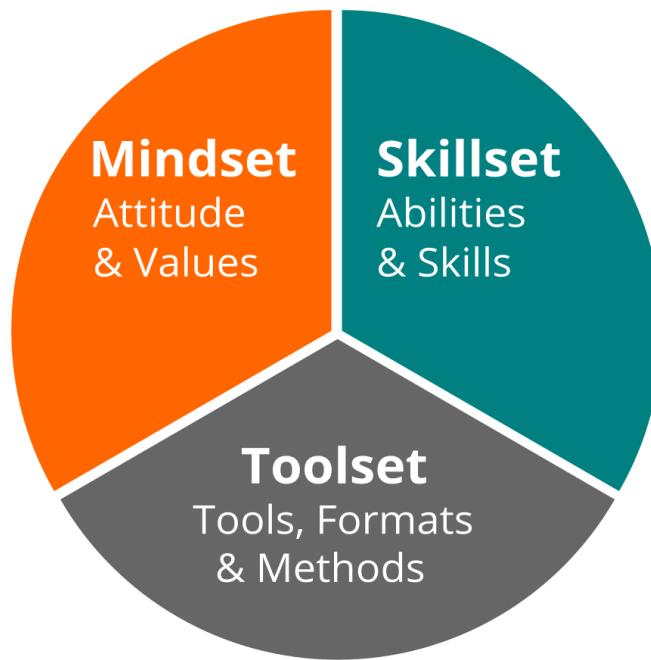


Abbildung 4: lernOS Wheel

The following table shows examples of internal (intranet) and external (internet) tool examples for the individual categories of the lernOS Workplace:

Tool Category	Description	Examples Internet	Examples Intranet
Search	Bing, DuckDuckGo, Google	Microsoft Search	
Browser	Chrome, Edge, Firefox	Chrome, Edge, Firefox	
Feedreader	Subscribe and receive news in RSS or ATOM format		
Podcatcher	Subscribe, receive and listen to podcasts	Apple Podcasts App, Castro, Overcast	Microsoft Stream
Digital Notebook	Manage personal digital notes	Evernote	OneNote, Joplin
Wiki	Wikipedia, Fandom	Confluence, DokuWiki, MediaWiki	

Tool Category	Description	Examples Internet	Examples Intranet
Office Package	G Suite, Collabra	Office 365, Libre Office	
Video Conferencing Software	Conducting Audio and Video Conferences	Jitsi, Google Hangouts Meet, Skype	Zoom, GoToMeeting, Microsoft Teams, Skype for Business, WebEx, BlueJeans
Mindmap	Creation and editing of hierarchical topic structures	Mindmeister	XMind, MindManager, Freemind, Freeplane
Software & Outliner			
Website	Jimdo, Squarespace, Wordpress	SharePoint Online, Confluence	
Weblog	Writing and publishing blog posts	Wordpress, Medium, LinkedIn (articles), Tumblr	HCL Connections, Jive, Yammer
Podcast and Video Blog Platform	Upload and Publish Audio and Video Blogs (vlogs)	YouTube, Vimeo, Podigee, Podcast Platform, Wordpress + Podlove	Microsoft Stream, Kaltura, Vimp
Filesharing	Organize files in folders	Dropbox, Google Drive	OneDrive, SharePoint Online, Nextcloud
Social Networks & Online Forums	Maintain Online Profile, Write Status Messages, Network with Others	LinkedIn, Twitter, Workplace by Facebook, Xing, ResearchGate, Reddit, Stackoverflow	Yammer, HCL Connections, Jive, Discourse
Chat	Write short messages, create chat groups	WhatsApp, Telegram, Signal, Threema, WeChat	Microsoft Teams, Kaizala, Slack, Mastodon, Threema, Mattermost, Rocket.Chat
Personal Information Manager & Email	Manage email, calendar, contacts etc.	Gmail	Outlook
Task and Time Management	Planning and keeping time for tasks	Trello, Todoist, Things, Omnifocus	Microsoft ToDo

Tool Category	Description	Examples Internet	Examples Intranet
Reference Manager	Link and Literature Management	Zotero, Mendeley, Liquidtext	

1.5 lernOS Memex - the “2nd Brain” of the learners

The individual knowledge and learning environments are just as individual as every single person is. The idea of lernOS Memex aims to create a common reference point here. Memex stands for “Memory Extender” and can be understood as a digital twin of one’s own brain, also called “second brain”. So that is what this learning path is about among other things.

The Memex in lernOS is a system that the user trusts and which, in addition to all the organizational and planning elements of lernOS, also contains references and descriptions to all other systems used in lernOS practice.

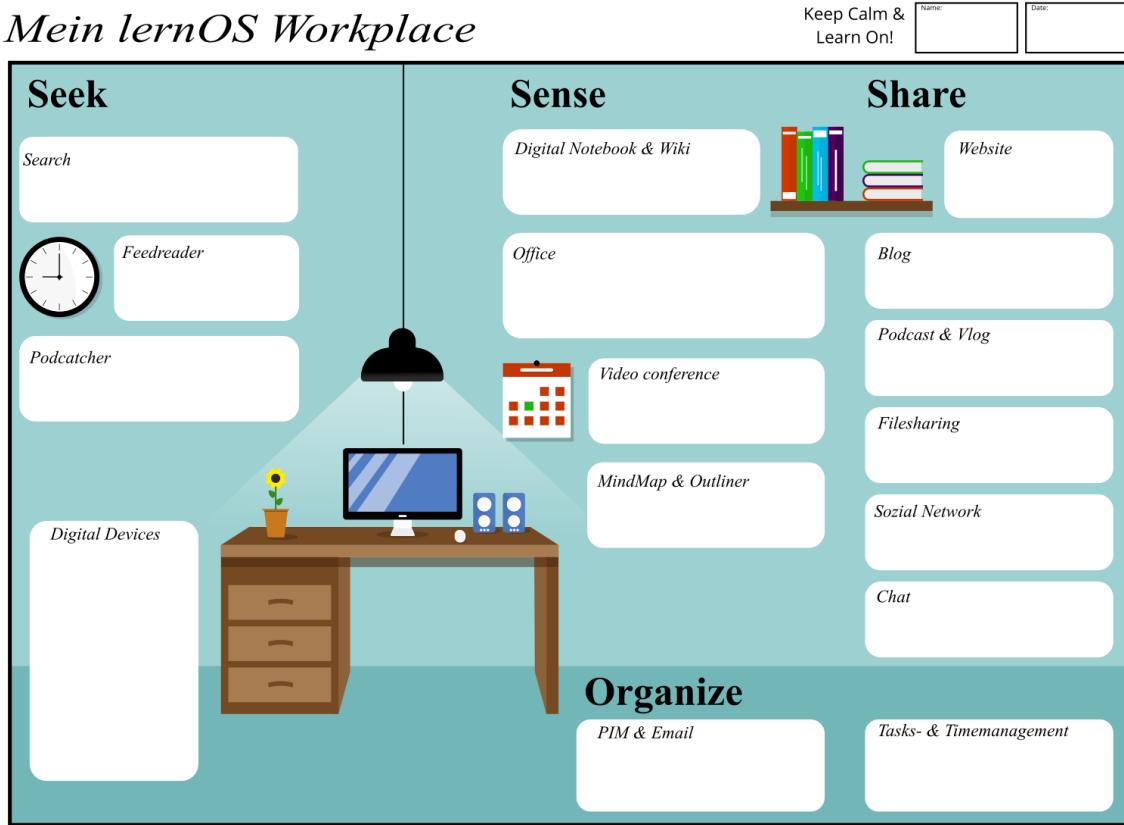
Theoretically, the Memex can also be implemented in analog form, e.g., in the form of a notebook. In practice, however, digital notebooks or scratchpads are mostly used (e.g. Obsidian, Logseq, Roam), as they offer many advantages over analog variants. For example, they offer unlimited space, can be searched, and contain audio and video content. More on this in the learning path itself.

2 Personal Knowledge Management Basics

In today’s world, it is more important than ever to constantly acquire new knowledge and information. However, knowledge alone is not enough to be successful. It is just as important, if not more important, to think knowledge further in order to combine it into something new. For example, to accomplish tasks and projects more efficiently, to adapt quickly to new demands and challenges, to better understand and pursue goals and plans, or to use study time more efficiently. However, this is easier said than done. Fortunately, there are personal knowledge management methods that can help. One of these methods is the note box method.

The notebox method is based on a bottom-up topic structure and aims to put thoughts and ideas in one central place and connect them to each other in order to gain new insights, internalize knowledge and create sound texts. It may take a while to see the first results, but if you use the slip box method continuously, you will benefit from the rich harvest.

In order to use the note box method successfully, it is important to use it on a daily basis. Read and jot down your thoughts on what you read. Precisely formulate your notes and link your knowledge

**Abbildung 5:** lernOS Workplace

Ein Screenshot des Microsoft OneNote-Browsers zeigt eine lernOS Memex-Datenbank. Die Seite ist mit "lernOS Weekly Review Checkliste" und "Mittwoch, 5. Februar 2020 11:16" beschriftet. Die linke Seite enthält eine Liste von Aufgaben unter den Kategorien "KLARHEIT SCHAFEN", "AUF STAND KOMMEN" und "ZUSAMMENFASSUNG". Rechts befindet sich ein vertikaler Navigationsbaum mit "Seite hinzufügen", "Mein lernOS", "lernOS Weekly Review Checklist", "Mission, Vision & Prinzipien", "Ziele", "Archiv", "Next Actions" und "Benutzerdefinierte Suchmaschinen".

Abbildung 6: Example of a lernOS Memex in Microsoft OneNote by Simon Dückert



Abbildung 7: Slip box method helps to link and expand knowledge

together. Connect your ideas and create overlapping connections. Ask yourself questions and try to answer them. Through this continuous thinking in the notebook, you will deepen your knowledge and generate new ideas.

In practice, the slip box method can be used in everyday work, study, and personal life. It can help to write well-founded articles, to make extensive thoughts tangible and to deepen your own knowledge. It is also helpful when writing articles, forum posts, social media posts, because you collect thoughts, prepare them and can insert them directly in an outline and have your contributions with depth already 90% ready.

Where the method can support you - Professionally - It facilitates efficient and successful completion of tasks and projects. - It supports career development by helping to build and demonstrate relevant knowledge and skills. - It enables faster adaptation to new job demands and challenges. - It increases productivity and the ability to make decisions quickly. - It improves communication and collaboration within the organization. - Private - It helps to better understand and follow one's goals and plans. - It supports self-organization and enables better management of time and tasks. - It promotes personal and intellectual development by helping to build new knowledge and skills. - It enables better management of finances and resources. - It increases the ability to solve problems and make decisions more quickly and effectively. - In studies - It supports the understanding and retention of learning content and facilitates preparation for exams. - It promotes the development of self-learning strategies and the ability to acquire knowledge independently. - It enables more efficient use of study time and resources. - It promotes the ability to make connections between different subjects and disciplines. - It increases

opportunities for successful career and professional development.

The slip box method was developed by sociologist Niklas Luhmann (*8.12.1927), who was able to publish about 70 books and 400 articles with its help. And all of them of high quality. He used his slip box analog. What do you think he could have accomplished with a digital slip box? Find out what you can achieve!

2.1 Links to further information on the subject of note boxes or personal knowledge management (PKM)

- Niklas Luhmann explains how he works with his box of notes²⁶ - 27:26 - 39:47
- Niklas Luhmann's slip box - Gabriele Vollmar²⁷
- Vollmar - Personal knowledge management²⁸
- Niklas Luhmann - I don't think everything alone (note box as time memory)²⁹
- PKM - Harold Jarche³⁰
- PKM Video - Harold Jarche³¹

²⁶<https://youtu.be/qRSCKSPMuDc?t=2246>

²⁷<https://youtu.be/gt6nRZQTYD4>

²⁸<https://www.wissen-kommunizieren.de/category/persoenliches-wissensmanagement/>

²⁹<https://youtu.be/NbncA7bDI70?t=18>

³⁰<https://jarche.com/pkm/>

³¹https://www.youtube.com/watch?v=HQbnoLxgx7I&ab_channel=HaroldJarche



Autor/in: CrazyCloud

3 Learning path

3.1 The learning objectives of the Zettelkasten pathway

3.2 Week 0 - Circle Setup

3.2.1 Theory

If you don't know each other in the Circle yet, get to know each other in week 0. Plan when you will meet, what tools you will use to share, and who will be the moderator.

Define a Circle facilitator who will handle event and time management. One of the biggest obstacles to successful Circle is discipline and time management. The moderator is not the “boss*in” of the Circle, but a normal Circle member who takes care of a smooth event. Define the day and time of the weekly meeting. Define whether you will meet in person or virtually. Define the tools you will use for

ZETTELKASTEN-OBJECTIVE

You can

- Store thoughts and information in a retrievable way
- Let thoughts grow and mature
- New connections and ideas in which thoughts find
- Find a workflow that suits you
- Set up your notebox environment once, use and sustainably optimize.



✓ LEARNING OBJECTIVES

You can

- Adopt all the helpful habits in the everyday life
- Organise and life
- Use the note box as a conversation partner for your own thought processes
- Organise your thoughts and information according to your workflow understanding
- Be productive in your own notebox environment by structuring your notes and find them
- Find them again

STEFENBON
CC BY Andreas Trebitsch, Maris Krobath, Friederike Schoeller-Frey

Abbildung 8: Zettelkasten-Learning objectives and kata overview



Abbildung 9: Der Zweck von Feedback

communication and documentation in the Circle. Decide which of the suggested exercises you will do in the Circle and as homework. If necessary, define rules or behavioral labels that are helpful to you.

3.2.2 Guiding questions you can answer for yourselves

- Alternating Circle facilitation?
- Day and time of Weekly?
- Weekly meetings are: in person / virtual?
- Tools used for offline communication (Can everyone use them?)?
- Where do we share the results? Do we use social media channels?
- Dealing with appointments where not all can attend (e.g. if 3 participants* cannot, the appointment is cancelled)?
- Attitude, principles for the Circle (e.g. the Circle should be fun! If you can't complete a task because you have other priorities that week, that's totally ok. We don't create additional stress)?

A very important function of the Circle is to get feedback on your goals, understanding and workflow and to give feedback to the others. To help you understand each other better in the process, take a moment to talk about your idea of constructive feedback. This includes the question “Why are you doing knowledge management?” and the principle “Compare yourself to yourself.”

3.2.3 Exercises

- answer the guiding questions together and find a consensus
- exchange ideas about constructive feedback

3.2.4 Reflection part

- How can we best give each other feedback to improve our goals and understanding?
- What are our personal reasons for using knowledge management in the Circle?
- How do we adhere to the principle of “compare yourself to yourself” in terms of feedback and goals?

3.2.5 Learning Objective

- You gain clarity in the Circle about the approach and the organization
- You get a safe space for giving and receiving feedback.



Abbildung 10: When writing the story of your life, don't let anyone else hold the pen

3.3 Week 1 - Goal definition & appointment with yourself

Week 1 is the only week that consists of two topics. Your goal definition and making an appointment with yourself.

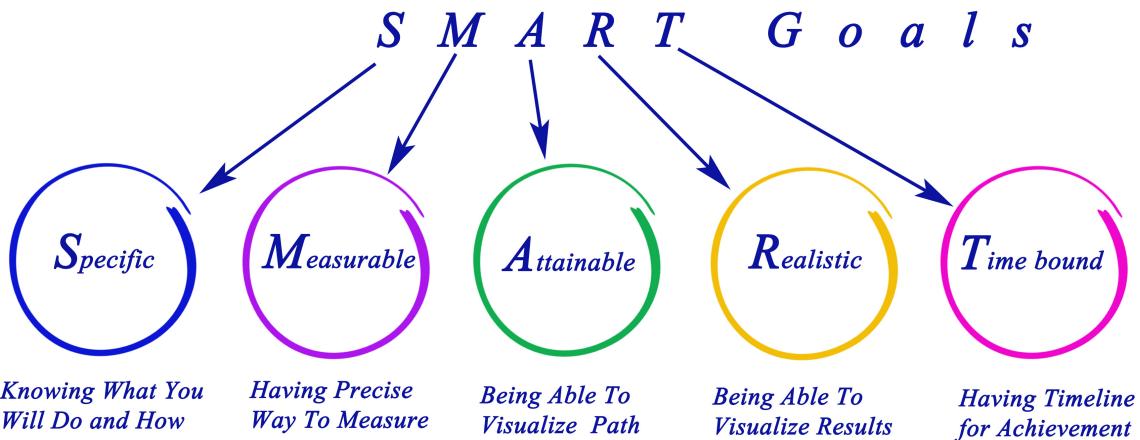
3.3.1 Goal definition

3.3.1.1 Theory What do you want to achieve in the next twelve weeks? You can choose a goal that is really, really important to you and with which you will make very concrete progress during the sprint. However, especially for PKM beginners, achieving the goal is not the top priority. In addition to learning the basic knowledge, the environment, the findability and permanence of notes, the focus is still very much on regularly applying the newly gained skills. In particular and last but not least, one main thing is our focus: having a lot of fun! :D

To ensure optimal learning success, it is important to set goals that motivate you and make your progress tangible and visible. You'll want to set your goals using the SMART formula or use Google's OKR method³² to define your goal. Consider whether you might want to work toward a specific product. This could be, for example, a blog article for your co-workers, or a first publication, or, or, or.... Visualize your goal. For this purpose, you can use different technical tools on the Internet.

Think about how you will share your progress in the Circle. In other words, if your first priority is to check-in, that's a bit low. Consider what documentation tools are out there that are good for logging your progress.

Define goals using the SMART formula.



Autor: Dmitry

Using the SMART method is a good way to define a goal. It applies various criteria against which the goal definition is measured. This way you have the guarantee to reach a smart goal.

Specific: Is it really clear what you want to do, or are you perhaps too vague in your wording? What is included, and especially what is not? Only if you really know exactly what you want to do and at the

³²links in the “More Information” section

same time know the limits of your intention, you can set out and be sure that you will arrive on the way in any case without getting bogged down or even losing your orientation.

Messbar: What must have happened so that you can say that your goal has been achieved. What work result is there then? For example, if you want to get “better” at something, what do you need to do and how often to get enough practice? Formulate in such a conclusive and measurable way that you can achieve just that. Essentially, ask yourself what you want to get better at or what exactly this “better” can be tied to. Characterize the first point, because the more specific you are in defining your goal, the more likely you are to get a result that meets your expectations, that can be further improved, and that can be markedly evaluated.

Attractive: Your goal must motivate you. You must want to achieve it if you want to spend 12 weeks to make it come true. Therefore, this point is especially important. It should be a goal that you have personally chosen for yourself and with which you can identify 100%. A goal that others set for me will rarely trigger the same desire in me to achieve it as one that springs from my own heart. In some explanations of the SMART formula, the A also stands for **A**nchallenging. Will mean that your goal should not be too easy. You should make a little effort and challenge yourself, because if you stay too far away from your personal limits and actually still chill in your comfort zone, you can rarely really improve. Ultimately, you need to go a little beyond your comfort zone without completely overtaxing yourself, because that’s where growth begins. Caution. Overextending yourself won’t yield sustainable results, and by and large, this learning path is meant to bring one thing above all else: a lot of fun! And that can quickly fall by the wayside if your goals are too ambitious.

Realistic: The learning path goes 12 weeks and therefore you should also choose a goal that is really achievable in this time. Stay down to earth when defining your goals. You can achieve anything at a snail’s pace and with perseverance. It is also key to question yourself in advance: Are you one of those people who like to choose their goals a little more challenging? How much time do you really have available each week? Does the whole thing really fit into the framework of the 12 weeks of the Learning Sprint? If it has to be, then say goodbye to one or the other idea for the time being. Ultimately, the first sprint is good training that will eventually become second nature. The current learning sprint may only have been a prelude.:-)

Terminated: Another important requirement of your goal that you should pay attention to is the date of completion. In the context of the learning sprint, this date can actually be determined very precisely. And that’s important, too, because it gives you the opportunity to check whether you’re still on track in terms of deliverables, open items, and any problems or obstacles, or whether you might need to put more energy into your work on the project or conclusively scale down your goal in order to achieve it at all. In week 7 we will look at the first interim results. A good moment to look at your own goal again from the SMART perspective and if necessary to readjust it a bit.

Example of goal setting with OKRs.



Abbildung 11: 3 Zonen Lernmodell

As easy as the card box is to explain, as challenging it can be to work with it at the beginning. For this reason, we recommend setting a concrete goal and possibly starting with a small project. To make this a little more concrete, here is an example.

Nima has started to study wants to work in science in the future, so clean scientific work and the corresponding writing organization should be practiced from the beginning.

Nima's goal for week 12 in the notebook learning path is to develop a routine in using the notebook. Therefore, Nima is considering working on this very routine with an upcoming term paper. For starters, it is very challenging to write 15 pages from the note box, so it makes sense to define even more key outcomes.

The question that can help you to define the Key Results is: How do I know that I am getting closer to my Objective?

1st Key Result: The key result that is obvious is the 15 pages written. 2nd Key Result: Nima has developed a complete workflow. This includes a reading routine, transferring notes to permanent notes, linking thoughts,....

Other methods for goal setting. WOOP, PACT, OKR:

**Additional Information.

- WOOP, PACT, OKR³³ (german)
- Wikipedia article SMART Criteria³⁴ (English).
- MIT Sloan article With Goals, FAST Beats SMART³⁵ (English)
- Article OKR - Google's Wonder Weapon for Business Success or: Get Out of the Comfort Zone³⁶ (German)
- Ted Talk How We Can Make the World a Better Place by 2030³⁷ (English)
- Video How Google Sets Goals: OKRs with Google Ventures Partner Rick Klau³⁸ (English)
- Video OKR-Agile Goal Management for Medium-Sized Businesses³⁹ (german)
- Video OKR - Leading with Objectives and Key Results (OKRs) - how the Google Leadership System works⁴⁰ (german)
- Book Introduction To OKRs by Christina Wodtke⁴¹ (english)
- Book The Beginner's Guide To OKR by Felipe Castro⁴² (english)

3.3.1.2 exercises

- Using a method of your choice, define your goal(s) for this learning sprint.
- Share your goal(s) with the Circle

3.3.1.3 Reflection part What is already going well? What have you already achieved? Who/what could support you? How would you know that you have fully achieved your goal?

3.3.1.4 Learning goal

- You support your learning success by making your goals measurable.
- You motivate yourself and the other participants by making your goals tangible.

³³<https://youtu.be/ogfCDKw2lbU>

³⁴https://en.wikipedia.org/wiki/SMART_criteria

³⁵<https://sloanreview.mit.edu/article/with-goals-fast-beats-smart>

³⁶<https://t3n.de/news/okr-google-wunderwaffe-valley-ziele-530092/>

³⁷<https://www.youtube.com/watch?v=o08ykAqLOxk>

³⁸<https://www.youtube.com/watch?v=mJB83EZtAjc>

³⁹https://www.youtube.com/watch?v=_ugCKONbBNs

⁴⁰<https://www.youtube.com/watch?v=y-alyqMZfnE&t=>

⁴¹<https://www.oreilly.com/business/free/files/introduction-to-okrs.pdf>

⁴²<https://felipecastro.com/resource/The-Beginners-Guide-to-OKR.pdf>



An appointment with yourself

3.3.1.5 Theory Do you take enough time for your personal development and to work on your goals? Many people are busy with their daily tasks and don't care enough about their development and well-being. A good approach is to make an appointment with yourself and reserve this time in your calendar.

3.3.1.5.1 More information:

- Video: 7 Big Rocks⁴³
- Podcast: Never enough time? Schedule your priorities by colorcoding your calendars⁴⁴

3.3.1.6 exercises Check your calendar and look for possible dates with yourself. An hour or even 30 minutes a week is a good starting point. Put an appointment with yourself on the calendar. If possible, make it a recurring appointment so that this time becomes a habit for you. Find at least five appointments:

1. ...
2. ...
3. ...
4. ...

⁴³<https://www.youtube.com/watch?v=fmV0gXpXwDU>

⁴⁴<http://www.asianefficiency.com/schedule-management/color-code-your-calendar/>

5. ...

3.3.1.7 Reflection part

- Discuss your approaches in the Circle.
- Do you have the same time slot each week?
- Do you find it easier to dynamically schedule an hour each week?
- How do you usually schedule recurring appointments and do you feel comfortable with the method?

3.3.1.8 Learning Goal

- You make a commitment to yourself to give yourself this learning space for the exercises.
- You create the necessary conditions to carry out the Circle successfully.



Week 2 - PKM Environment Setup

3.3.2 Theory

When it comes to organizing your personal knowledge management, choosing the right program can be helpful. A good program will give you the ability to store your notes in one place and ensure that you have access to the information you need at any time.

There are many different programs on the market that focus on different ways of working and personal preferences. It may be wise to take the time to look into different programs to find the one that best fits your needs.

It is important that your knowledge is stored in a format that considers future viability. However, it is important to remember that programs can change over time and it may be necessary to choose a different program.

It is important to note that your choice of program is not set in stone and you have the ability to change your decision at any time. To help you with your decision, we have created a questionnaire to give you a start. However, it is important to note that this is only a guide and it is not the only option.

There are also programs like OneNote and Evernote that may not be for everyone, depending on what features and requirements you have. It's important to review the different options and choose the program that best fits your needs.

3.3.2.1 Questionnaire to choose a program You can use the questionnaire to support your choice for a tool:

1. what kind of data do you want to store and organize (e.g. texts, images, audio files)?
 1. i want to store and organize mainly text files. (A)
 2. i want to store and organize mainly text files and images. (B)
 3. i want to store and organize mainly text files, images and audio files. (C)
2. Which features do you need (e.g. branch structure, version history, markdown support)?
 1. i need branch structure and version history. (A)
 2. i need branch structure, version history and markdown support. (B)
 3. i need a branch structure, version history, markdown support and the ability to view multiple branches at once. (C)
3. How important is the ability to access your data from anywhere?
 1. It is very important to me to be able to access my data from anywhere. (A)
 2. it is important to me to be able to access my data from anywhere, but it is not the most important feature for me. (B)
 3. It is not that important to me to be able to access my data from anywhere. (C)
4. How important is the ability to collaborate with others to you?
 1. it is very important to me to be able to collaborate with other people. (B)
 2. it is important to me to be able to collaborate with other people, but it is not the most important feature for me. (A, C)
 3. it is not so important for me to be able to cooperate with other people. (A, B, C)
5. How important is the ability to export and backup your data to you?

1. it is very important to me to be able to export and backup my data. (A, B, C)
 2. it is important to me to be able to export and backup my data, but it is not the most important feature for me. (A, B, C)
 3. it is not so important for me to be able to export and save my data. (A, B, C)
6. How important is the customizability and extensibility of the software to you?
1. it is very important to me that the software is customizable and extensible. (B,C)
 2. it is important to me that the software is customizable and extensible, but it is not the most important feature for me. (A)
 3. it is not so important to me that the software is customizable and extensible. (A, B)
7. What platforms does the software support (e.g., Windows, Mac, Linux, iOS, Android)?
1. I need the software on Windows and Mac. (A, B, C)
 2. i need the software on Windows, Mac and Linux. (A, B, C)
 3. i need the software on Windows, Mac, Linux, iOS and Android. (A, B, C)
8. what pricing and subscription models does the software offer?
1. I am willing to pay for the software and agree to a subscription model. (A, B, C)
 2. I am willing to pay for the software, but I prefer a one-time purchase model. (A, B, C)
 3. I am not willing to pay for the software and am looking for a free alternative. (A, B, C)
9. what kind of visualizations and diagrams do you need?
1. I need the ability to visualize my data in mind-map form and graph-based charts. (A)
 2. i need the ability to present my data in mind-map form, graph-based diagrams, and other types of diagrams and visualizations. (B)
 3. I do not need special features for visualization and diagrams. (C)

Count the letters together. Depending on which letter you have the most choices, A: Roam, B: Obsidian, C: Logseq could be the most suitable for you.

This questionnaire is only a help and there is no guarantee that one of the above tools is the best for you. It is recommended to test the tools yourself to make sure it meets your requirements. (And they are not the only tools, they are only common tools)

If it is not possible for you to use a program optimized for knowledge management, e.g. due to restrictions of company IT policies, you can also start with OneNote. In the appendix (Guide to implement PKM with OneNote) you will find some notes. Also how to switch from a proprietary format to Mark-Down.

3.3.2.1.1 Links to common PKM programs

- Obsidian⁴⁵
- Logseq⁴⁶
- Roam⁴⁷

If Markdown is foreign to you, and you want to use it in your Zettelkasten, check out the attachment. There is a crash course there. (In principle three characters are enough to use it)

3.3.3 Exercises

- Choose a program, either with the help of the questionnaire or otherwise
- Install your chosen program
- Familiarize yourself with the program
- Create a note
 - Title: Hello world
 - Text: My first note

3.3.4 Reflection section

1. what aspects are most important to you when choosing a program for personal knowledge management?
2. what kinds of notes do you take most often and what features would you need in a program to organize them?
3. how do you deal with the possibility that programs will change and possibly disappear from the market?

3.3.5 Learning Objective

- You have installed and set up your Zettelkasten environment
- You have become aware of what is important to you for your box work.

⁴⁵<http://obsidian.md>

⁴⁶<https://logseq.com/>

⁴⁷<https://roamresearch.com>

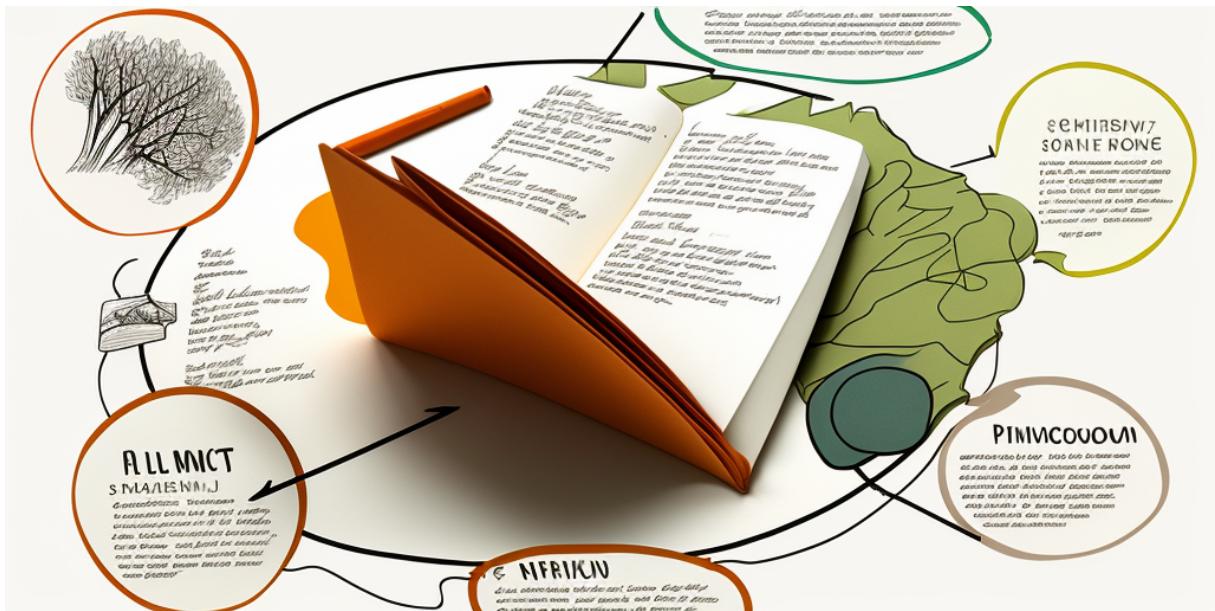


Abbildung 12: Notizen kennenlernen

3.4 Week 3 - Get to know notes

3.4.1 Theory

3.4.1.1 Types of notes It is not mandatory to use the terms, and the types can overlap and blend into each other. Just think of it as helpful background knowledge to guide you, and keep an open mind and flexibility in the application itself. The notebox is a living system and so it adapts to you.

3.4.1.1.1 cursory notes When you read a text and underline, mark up, write a few notes in the margin, or even write down notes while listening to it, these are ephemeral notes. Fleeting because usually after a few hours, after a few days you can no longer quite grasp the meaning of your underlining, key points or have completely forgotten. Maybe you have experienced this in school when you wanted to prepare for a class assignment and went through your notes ;-)

3.4.1.1.2 Literature Notes The literature note, or bibliographic note, is the reference to the source of the information. The purpose of the bibliographic note is to record the source of the information. Depending on what you expect of yourself, you may want to include more or less information. If you are working scientifically, you will need to include more information, as there are usually general guidelines for this, which we will not go into here. Apart from that, you should always note down the following information - author - Book title/Internet link - date of publication

3.4.1.1.3 Permanent notes Your thoughts about the information are in the Permanent Notes. Every note you put in your notebox is meant to stay in your notebox forever. Hence permanent. It is irrelevant if you keep rewriting the note with the newest information or if you create new notes with new information and link them.

3.4.1.1.4 Map of Contents / Index Map of Content or Index notes are entry points on a higher level. Later we will come to how such notes are created. Here it is only about the fact that you already know that such a thing exists. When you have a lot of notes in your system, you will need a method to find your thoughts when you need them. And that's where these Map Of Contents help. By the way, there can be several levels of them, depending on how extensive your thoughts on a topic are.

3.4.1.2 Structure - DNA of a note A structure for notes? Since it is not enough to simply record the thought, but it needs to be coherently “taken in hand” in order to creatively stand in (d)context, there is a structure for this. The thought itself is certainly the most important thing in the whole, ultimately it comes from a context and is thought in a new one. Directly following this is the retrievability of the thought. On the one hand you have to grasp it quickly and on the other hand this only happens if you follow the always same structure of the note. This way your brain has accordingly the capacities it needs free to actually grasp the information dynamically. The recognition effect that is in the DNA of your note can actually serve you well....

You can use your own structure. Maybe you already have one you feel comfortable with and want to keep using it. That's perfectly fine. You can also create one according to your own ideas. The important thing is that you stay consistent with it. Changes over time are natural with increasing knowledge. But you should not reinvent your structure every week or even every note ;-)

Here is a suggestion for a structure

3.4.1.2.1 Metadata Here you can enter information like author, source, date, tags and alias. With most PKM programs this information can also be searched and displayed selectively. Thus, the information of the literature note can also be embedded in the metadata.

3.4.1.2.2 Title Each note needs also a title with which it can be identified unambiguously.

3.4.1.2.3 Thought Here is the actual note. The thought you have. Knowledge, thoughts, conclusions, what you have in your head.

Dateiname = Titel

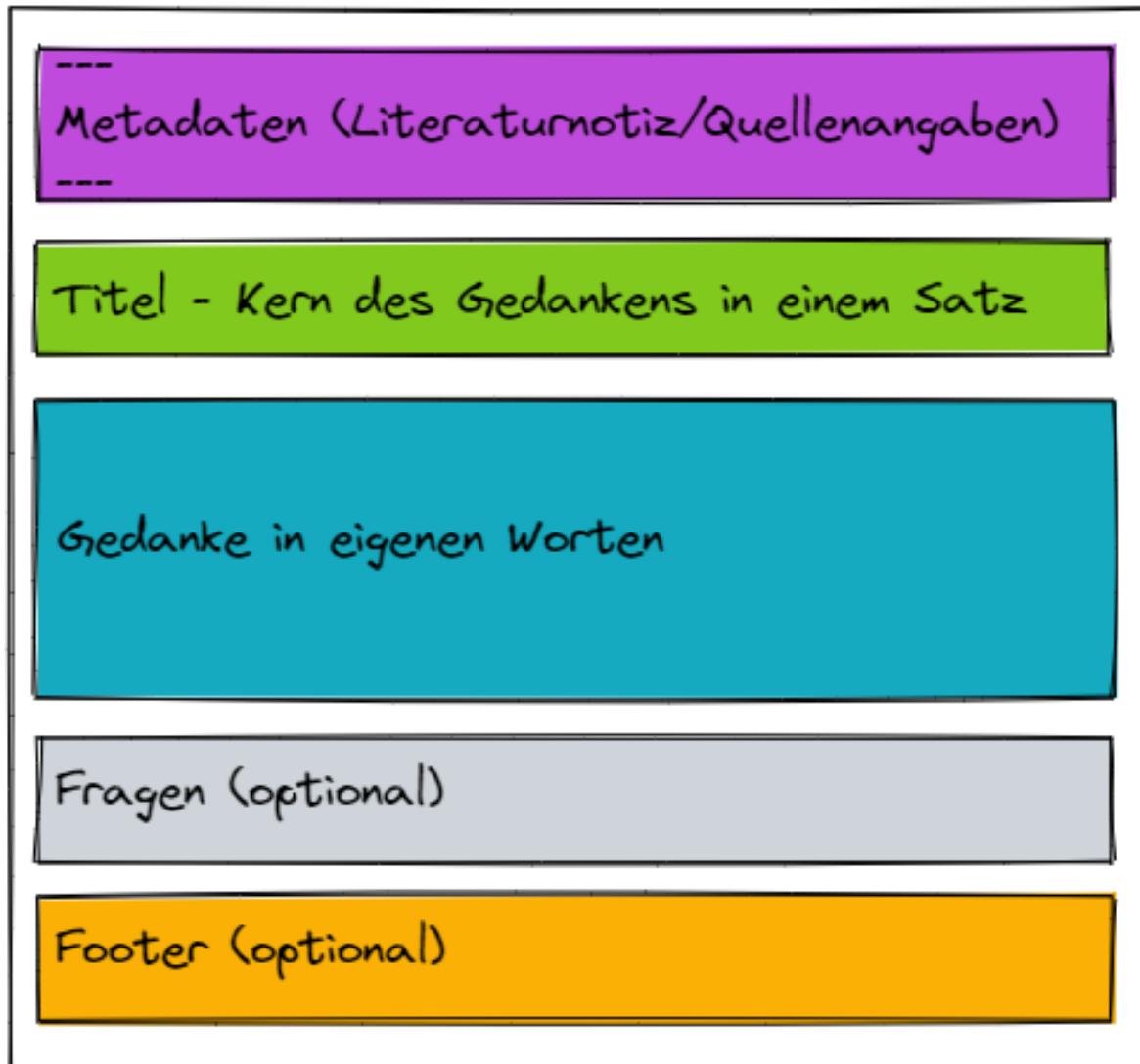


Abbildung 13: DNA of a note

3.4.1.2.4 Questions If you ask yourself questions about the thought, you can put them in an extra questions section. This way you can always find your unanswered questions immediately.

3.4.1.2.5 Footer In the footer could be links to other relevant notes that are not in the text, but still have a relevance to the topic. The source, the literature noitz, could also be placed here.

3.4.1.3 Note in your own words If you can reproduce a thought in your own words, then you have understood the thought. In essence, you can check whether you have acquired the knowledge or not. If you express the thought in your own words and can't find the right words for it, you realize that you didn't understand it after all or maybe you need to practice to improve your performance. If you can express it in your own words, you will already use your own linguistic (or visual) meta-model. All this will most likely guarantee that in a few years you will still be able to express the idea and that it will be understood. This topic will be discussed again in detail in the kata *Creating durable notes*.



Abbildung 14: Sprechblasen

3.4.1.4 Progressive Summarization Progressive Summarization, the term was defined by Tiago Forte, is a technique of summarizing a text in iterative steps and reducing it to its essentials. Ideally, 10% of the text remains after each iteration.

Step 1: the complete text excerpt from a source Step 2: underline or mark in bold the most important statements/sentences of the text Stage 3: From the underlined/bold marked the most important keywords highlighted that are important for the statement. Level 4: A summary in your own words Stage 5: Bounding

In this process, the original text remains available at all times. If a higher level is not understood, the level below can be read. The method acts much like a safety net. Also, the method can still be used well when not so much energy is available. The method is a method, it does not have to be used. You can also record what you have read, heard or seen directly as audio, thereby increasing your social presence within a learning group, or reproduce it in your own words in a timely manner.

3.4.2 Exercises

- Write down your questions about what you have written above
- Discuss your understanding on notes and clarify the questions everyone has

3.4.3 Reflection part

- Do you feel picked up or unsettled with the information above?

3.4.4 Learning Objective

- What a note should include at a minimum
- What is optionally helpful in a note
- Self-check if the knowledge was understood
- Identify essential statements from texts
- Different types of notes and their meaning

3.5 Week 4 - Create first notes

3.5.1 Theory

Successful personal knowledge management in the notebook requires regular work. By taking time to regularly create and process notes, you can continuously increase your knowledge. Often it is enough to create a few, but regular notes. Every note, every linking of notes, and the thoughts that arise from them contribute to the increase of your knowledge. It is important to understand that knowledge management is a marathon and not a sprint, so you should also take time to take small steps.

To make note-taking easier and more energy-efficient, it's helpful to establish routines. You can do this, for example, by setting specific days or times when you create and process notes.

Fleeting notes, such as those created during a meeting or lecture, should be processed as quickly as possible to help you remember them later. The shorter the interval between the creation of the note and its processing, the better you can remember it later.



Abbildung 15: Flüchtige Notizen

To create your first note in the note box, you can use the information from Week 3 (Getting to Know Notes). The topic of your first note is not that important, it should just be something that interests you but is not so important that it paralyzes you. It's perfectly fine to create multiple notes and link them - try it out and see how it works for you.

3.5.1.1 Tip If you're unsure about what information to include in your Zettelkasten, you can check the information against the following criteria: - the information speaks to me - the information makes me think - I need the information for a topic I am working on. If necessary, look again at week 3 - *Getting to Know Notes*.

3.5.1.2 Tip 2 To create links in Mark-Down just put [[]] around the note name and it becomes a link.



Abbildung 16: Create links

3.5.2 Exercises

- Create note(s)
 - Read an article/book/topic that you are currently interested in and create note(s) from it.
- Optional: set a rule date that goes beyond the sprint to process your cursory notes at a set time.
 - In addition to the sprint deadline, you can create another deadline for your Zettelkasten.

3.5.3 Reflection part

- In the circle, discuss the experience and the outcome (not the content of the note)
- What interested you most in reading the article/book/topic and why?
- From the material you read, what information/thoughts did you think were important enough to record in a note?
- What were the challenges in creating the note(s) and how did you overcome them?
- How did you process your cursory notes and how did it help you remember them?
- How did setting regular appointments for processing notes help you? What were the benefits and challenges of doing this?
- What insights did you gain about your habits, functioning, and learning needs after doing this task?

3.5.4 Learning Objective

- You can create a note in your notebook that will still be understandable to you 10 years from now.
- You are now committed to meeting your rule deadlines.
- You regularly file notes in your note box.

3.6 Week 5 - Create permanent notes

3.6.1 Theory

Creating notes requires some thought in order to effectively manage personal knowledge. An important foundation here is the atomicity of notes.

Atomicity means that each note refers to exactly one idea. This idea should be elementary and to the point, without prose or unnecessary details. Because of the atomic structure of notes, large ideas or



Abbildung 17: Länge der Notiz

abstract considerations can be created from many small building blocks, or thought processes can be connected.

An important component of a note is the title. This should be unique and designed to be as eloquent as possible. In this way, it is already possible to recognize from the title what the note is about and whether it can be useful for the current project. It is recommended to limit the length of the title to ~20 words⁴⁸.

Regarding the length of the note, the text should be kept short to be able to capture the thought quickly. As a guideline, you can use 450 words or a DINA 6 page.

In summary, creating notebook-style notes effectively requires:

- Atomicity: each note should relate to one elementary idea, without prose or unnecessary details.
- Unique, speaking title: the title should get to the heart of the note's idea and be limited to 20 words if possible.
- Short text length: the text should be kept short in order to capture the idea quickly, guideline is 450 words or one DINA 6 page.

3.6.2 Exercises

- Find a piece of paper that does not fit into the criteria. The criteria are

⁴⁸256 characters including file path

- Only one idea on the note?
 - Does the note fit on a DINA6 page (~450 words)?
 - the title reflects the basic idea
- Rewrite the note so that the criteria are met.
 - divide it into several notes if necessary, one idea per note
 - Delete unnecessary text (prose)
 - Make the title short, concise and meaningful so that it directly reflects the idea.
 - * Ideally, it can be used as a sentence directly in a text.

3.6.3 Reflection section

What is the benefit of talking titles? - How can you make sure that a note actually refers to a single idea? - How can you make the title of a note as meaningful as possible and give a quick overview of the note's content? - How can one ensure that the length of a note is appropriate and allows the idea to be captured quickly? - To what extent does it help knowledge management to organize notes into atomic units? - How do you proceed when you come across a note that does not adhere to the criteria? What steps are necessary to adjust it? - To what extent is it beneficial to build the titles of notes as a sentence and how can you implement this?

3.6.4 Learning objective

- Reduce a note to a single idea.
- Keep notes short and essential to be able to recall knowledge quickly.



Week 6 - Frittering

3.6.5 Theory

We start at one thought and move sequentially from there to the next thought. In the end, we have come from one starting point to a completely different point by chaining.

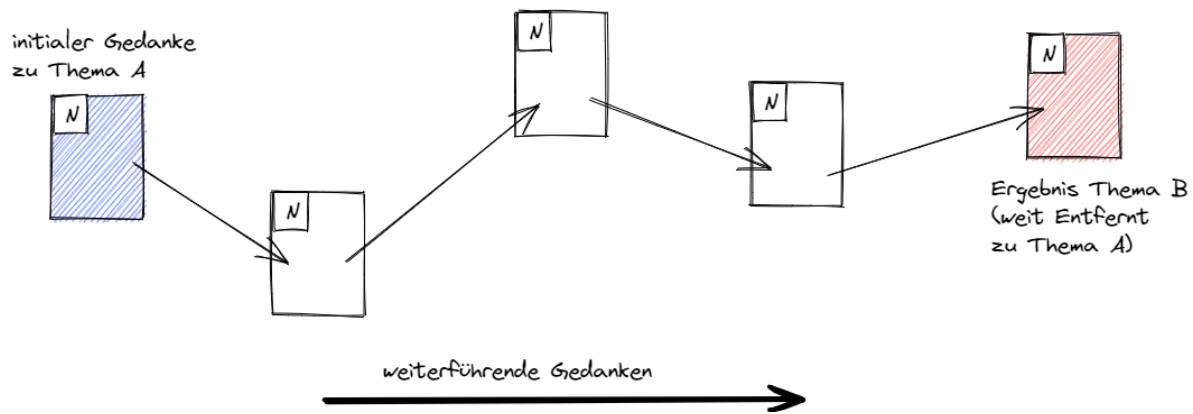


Abbildung 18: Model of the thought chain with notes

The same thing happens now with linking notes. A thought starts in a note, which leads to another thought (note), and on and on. This is a fundamental aspect of dovetailing, connecting information that has to do with each other.

From this connecting of information, clusters of topics emerge. This is what is meant by bottom-up in

this context. Areas/topics are not defined in advance, but the topics are formed by the accumulation of knowledge and networking with each other to form topic areas.

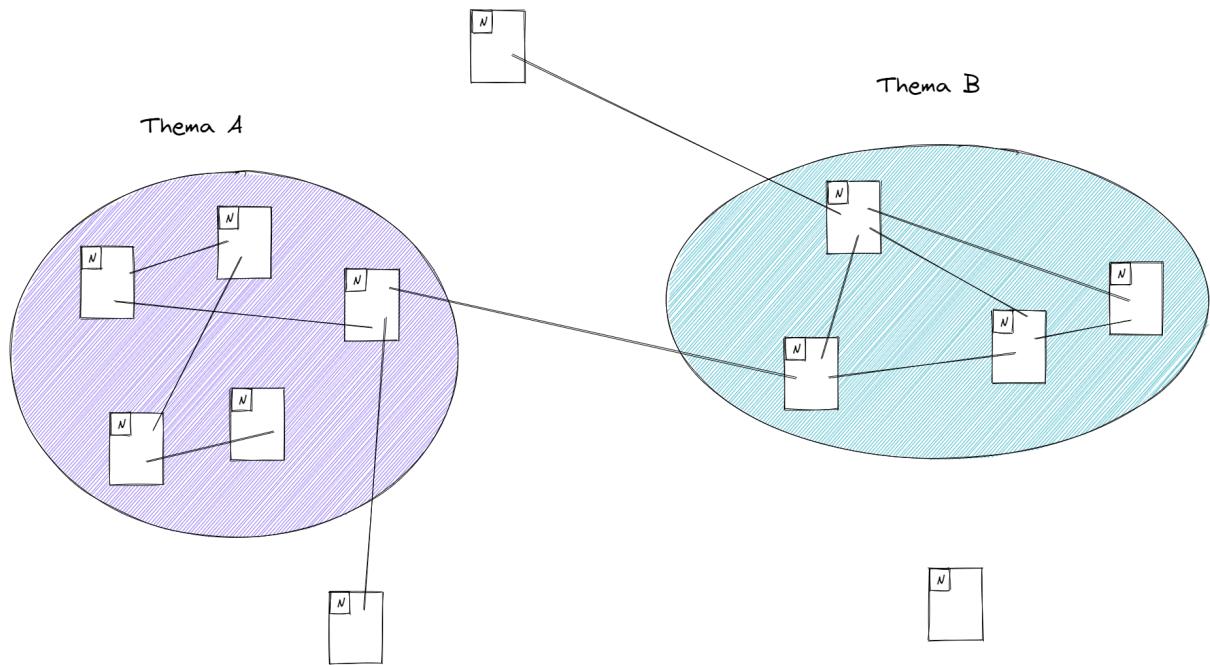


Abbildung 19: Emergence of bottom-up topic clusters

Thus, not only topic clusters but also natural entry points for topics are created by the divergence. Connections grow between topics that were not known before. This can lead to new ideas or even completely new approaches: something new emerges. In this way, your knowledge connects in your own notebook just as it is laid out in the neuronal structure of your brain, and in the process it sinks in deeper and deeper.

A piece of information is best found when there are many links on it. This is predetermined by the brain's system. You use this when you create your note. Therefore, linking relevant information increases the findability and memorability of the information. Note-taking is also important for this. It keeps the information in the Zettelkasten together and makes it accessible so that you can think and work with it on a deeper level (your long-term memory).

The more notes you have in your box, the more important and clear it becomes. Even if you only have a few notes in your Zettelkasten, it's worth starting now so that it grows. This way you will save knowledge and deepen it at the same time.

3.6.6 Exercises

In the last kata, you already made notes more atomic, so now you can capture the idea of the note more quickly.

Go through the notes in your Zettelkasten and if you notice that two ideas belong together, can look out for each other, or are otherwise connected, link them together.

If questions come to mind as you read the note, look for answers in your Zettelkasten and link them if you find notes that match.

Break down other notes into smaller components (keyword atomicity, from week 5), linking them as you go, as soon as you get the impression that they should be related.

You can also create direct links to other notes that you know are related when adding permanent notes.

You can put the link in the Footer⁴⁹ area, or you can link inline⁵⁰.

And keep in mind, a link is not only to the same topics, but can also be a completely new link, just the one you see. You could also create a new note explaining for yourself why you see a connection between the

Looking at the surrounding situation of a problem can bring greater insight for the solution

Looking at the surrounding situation of a problem can bring greater insight to the solution. If the problem itself is removed from consideration, the impact remains. However, the focus of the observation can wander more freely and thus discover more.

Umgebung
Problem
des Problems

Umgabeung zeigt Ebenso das Problem oder mehr

Why it is with each other has to do

IF an image, thus t

there is the negative space with pictures as well as with problems, the consideration is quite similar

Contours of the negative space trace the contours as well as the object itself. Like a piece of a puzzle. This is especially true in painting. Also with problems. The effect is the same. In both cases, looking at the negative space helps to see the situation more openly, and therefore more.

Sources:

Relevant:

- there is the negative space with pictures as well as with problems, the consideration is quite similar
- If an object is cut from an image, the shape remains and thus the object in the image.

Tags:

two notes. The following image illustrates this.

⁴⁹The bottom area of a note

⁵⁰Insert directly into the text or sentence

Note: If you are working a lot and intensively on a topic, it might make sense to set up an additional time per week where you only focus on linking ideas to each other. Tags like they exist in Obsidian can be helpful to link not yet linked notes.

3.6.7 Reflection section

- Would you do things differently the next time you get bogged down?
 - What do you like about what you've done so far?
 - What would you do differently next time?
 - What would help you do that?
- Are you satisfied with the result?

3.6.8 Learning goal

- You have received new associations and made connections
- You have formed new topic clusters



Abbildung 20: Stop

3.7 Week 7 - Pit stop

3.7.1 Theory

Congratulations, you have made it this far and have come a long way! You now have the most important foundations for your personal knowledge management, namely:

An important foundation is your PKM-environment. Here you will find all your information and notes. You have already learned about different types of notes:

- cursory notes,
- literature notes,
- permanent notes and
- the “map of contents”

Another important basis is the structure of a note. With a consistent structure, you can quickly orient yourself and better grasp and add information. A unique title, preferably a speaking title, and the thought succinctly to the point supports you in your knowledge work. Metadata helps you to find information.

Another important concept is branching out. Link your thoughts and create natural entry points into topics. This creates connections between different topics and can lead to new ideas and approaches. By linking relevant information you increase findability and memorability.

Do you still have open questions? Are you still on track and have your learning goal clearly in mind or has your goal changed and should therefore be readjusted?

Outlook:

- Finding information,
- Create a “map of content” and think in a box of notes,
- Establish a workflow so that you can expand and use your knowledge in the best possible way in the future.

3.7.2 Exercises

- Do your current goals still fit for you and how can you make sure you achieve them in the remaining 5 weeks?
 - If they no longer fit, change them so that they fit for you again (this is also possible).
- Write down the three basic questions you have regarding the notebook.
- Share your progress of your goals with your circle
- Discuss your questions with your circle

3.7.3 Reflection part

- Do you feel confident using your slip box?
- Do you feel comfortable with your goal and how you have achieved it so far?

3.7.4 Learning objective

- Check whether your own goal can be achieved
- Determine which questions are open with regard to the slip box



Abbildung 21: Wiederauffindbarkeit des Wissens

3.8 Week 8 - Knowledge retrieval

3.8.1 Theory

You have now already created some notes in your note box. But your notes are still easy to keep track of. However, if your note box continues to grow, it may start to become confusing. Therefore, it is now a question of how you can find your knowledge in your note box again, if it becomes more and more extensive. An important requirement of your system is the retrievability of information.

Retrievability means being able to find information you once stored later when you need it. This contrasts with information retrieval, where you know the information you are looking for is in a specific

document and you have to search that document specifically. An important aspect of linking knowledge is the ability to link to notes that fit the topic. Of course, this is most easily done if you remember that you have that information in your Zettelkasten. Otherwise, we are already in the topic, how do you find information back in your note box?

Successful knowledge management should therefore originate bottom-up topic oriented and have indexes, or Map Of Content (MOC) notes, as entry points. This way, you can avoid getting lost in the flood of notes and instead search specifically for information that you had in your head but can no longer name precisely. Or even “stumbles” across information that you had “forgotten” was in the system.

Factors that influence the retrievability of information include the structure and organization of the notes, the use of keywords and tags, the possibility of full-text search, and the use of metadata.

One way to improve retrievability is to create indexes or a Map of Content (MOC). This defines major points of contact from which more detailed information can be accessed. Another option is the use of tags to quickly browse topic affiliations. However, the TAGs should be used rather sparingly, too many TAGs can lead to not seeing the forest for the trees. TAGs should also be maintained regularly to remain useful. A full-text search within the notes makes it possible to search specifically for certain terms. By using metadata, such as aliases, authors or book titles, notes can be filtered and sorted specifically. Another way to make notes retrievable is to link them to each other. This makes it easy to move from one topic to the next and keep the information thematically coherent. What emerges in the previous exercise when you get bogged down. Train of thought.

3.8.2 Exercise

- Use keywords and tags: Try to add keywords and tags to the notes in your Zettelkasten to make it easier to identify topics.
- Create an overview of the keywords and tags you use in your Zettelkasten and think about how you can target them to improve information retrieval.
- Try out full-text search: Experiment with full-text search within your Zettelkasten to target specific terms.
- Experiment with how you might navigate along a thread to find information within the thread. Even if you know exactly where the information is, how would you navigate to it if you only knew it was *somewhere* in the thread?

3.8.3 Reflection section

- What methods and tools do I currently use to improve the retrievability of information in my Zettelkasten?

- What other ways of improving retrievability, could I use in my Zettelkasten?
- Analyze your box in terms of how do you find your information?
 - How long does it take you to find information?
 - What paths do you take?
- What thoughts do you have about the above information? Have you written them down?
- To what extent do you currently use linking notes to each other to make the knowledge in your Zettelkasten accessible?
- What are your current challenges with retrieving information in your Zettelkasten and how can you solve them?

3.8.4 Learning Objective

- Understand how different entry points can be used to find information.
- Know the entry points in your own note box.



Week 9 - Map Of Content in 3 stages

3.8.5 Theory

You may be wondering, what is a Map Of Content (MOC) and why do you need MOCs in your Zettelkasten? MOCs are entry points to larger subject areas. They are a map to your knowledge with which you can safely orient yourself within a topic area. They allow you to get a quick overview without having to read all the details again. If necessary, you can of course read deeper into the details. As I said, you can get

an overview of a topic with a lot of notes by using a MOC and you can also elaborate it more. Think of a MOC as a room where all the notes on a topic can exist without you having to combine them directly in a meaningful way, but you could. You can just create a room in your Zettelkasten that contains all the notes on a topic and you don't have a compulsion to link them directly now in a logical and sequential way. They may all be in there.

Now you may ask yourself, when should you create a MOC? Nick Milo has some helpful advice here and also immediately suggested a method we use here. You should create a MOC when you have the feeling to lose the overview of a topic. Then it is really high time. An indication could also be if you keep looking for information, but can't find it directly.

1. get all notes about the topic into a new note
2. weigh the notes against each other, work out thoughts, divide, structure. This is where new insights emerge because you are intensely engaged with your thoughts. This process can take several days. You create an overview of the topic based on your notes.
3. Link the MOC in the system and ensure findability

Keep in mind that MOCs will continue to evolve, they are not static. As your knowledge grows the time will come to update a MOC. The notes will be weighed against each other again. A MOC can in turn contain several MOCs and thus a whole hierarchy of MOCs on a topic can emerge.

Here again the most important points to MOCs - offers entry points to larger topics and helps to get an overview and to work out topics with many notes. - Should be created when there is a feeling of losing track of a topic. - MOCs can evolve - a MOC can contain several MOCs.

3.8.6 Exercises

- Choose a topic for which you want to create a MOC.
 - It makes sense to choose a topic for which you have several notes in your Zettelkasten.
- Gather all your notes on that topic into a new note.
- Go through all the notes and weigh them against each other. Revise them, reducing them to single ideas and removing unnecessary information.
- Create a subdividing structure from the remaining notes.
 - (optional) write an overview of the topic.
- Connect your new MOC to the rest of the note system by tagging it appropriately.
- Make sure the MOC is easy to find by choosing a meaningful title and adding relevant keywords.
- (Optional) Consider whether it is possible to further subdivide the topic and if so create appropriate sub-MOCs.

Hints: - The process can take a lot of time - It is not necessary to structure the notes hierarchically, experiment with different structures to find the best one for the topic. - It is recommended to practice creating a MOC regularly.

3.8.7 Reflection section

- How did creating the MOC impact my understanding of the topic and what insights did I gain through the process?
- What were the biggest challenges in collecting my notes on the topic?
- What type of structure did I choose for my MOC and why?
- What can I do to ensure that my MOC is easily findable?
- How often should I update my MOC and why?
- How can I improve the creation of MOCs in the future? What methods or tools would I like to try?

3.8.8 Learning Objective

You understand the process for creating a MOC and have put it into practice.

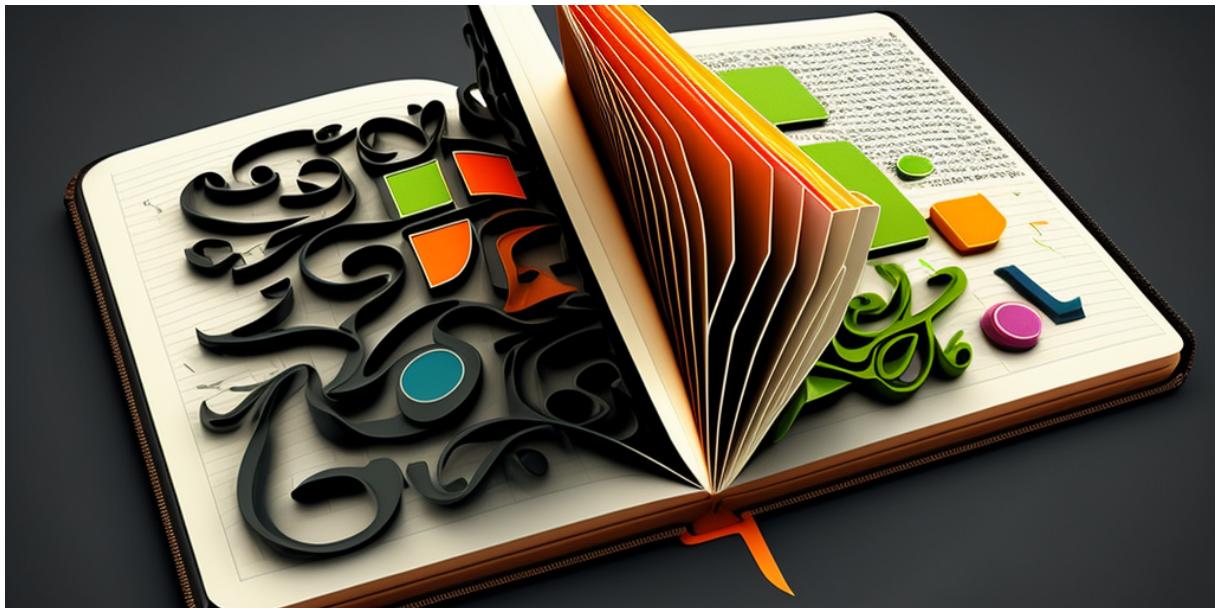


Abbildung 22: Denken im Zettelkasten

3.9 Week 10 - Thinking in a note box

3.9.1 Theory

The note box is not only a collection of read knowledge, it also stores the own thoughts about the read knowledge, about work results and generally own thoughts and ideas. With this fund of material, the slip box can serve as a conversation partner. It is asked questions and the note box provides answers, if it has any. New connections, insights and new questions arise from this. It is thought in the note box, or with the note box. The interesting aspect becomes that thinking becomes more objective, since all previous thoughts can lie on the table, can lie next to each other. It becomes possible to objectively draw comparisons between parallel and even contradictory thoughts. When a question arises, it is a good approach to search in the first instance in one's own note box, because there is already a high quality of thoughts and selections. When thinking in the note box, I try to answer my own questions that I have about a thought, further questions. One thing leads to another and a train of thought unfolds. Either until all answers are found or the interest in this train of thought is lost. This thinking in the note box is part of the magic of the note box, it expands and sharpens one's knowledge and in the process allows new insights to emerge.

By the way, if you find notes in your slip box that contradict each other, neither is removed. Instead, another note is created that deals with the contradiction, e.g. why it is a contradiction. Whether there are areas where sometimes one is *correct*, sometimes the other. A contradiction offers the possibility to learn and grow from it. Likewise it leads to the clearer demarcation of the statements. So it is anything but a problem.

3.9.1.1 Tip on structure The way of noting is open. It is recommended to use a mechanism how still open questions can be found. e.g. with a TAG #question. Likewise a fixed arrangement is helpful where in the notes open questions are to be able to recognize this fast. Here from the Kata [[Zettelkasten Lernpfad - Kata - Notizen kennenlernen#Struktur - DNA einer Notiz]] is fallen back.

3.9.1.2 Tip for asking questions - The Socratic Questions If you can't think of questions right away, you can also use Socrates' questions for yourself:

1. clarifying your own thinking and explaining the origins of your ideas (Why do I think this? What exactly do I think?).
2. questioning assumptions (How do I know this is true? What if I think the opposite?)
3. looking for evidence (How can I prove this? What are the sources?)
4. considering alternative perspectives (What might others think? How do I know I'm right?)
5. examining consequences and implications (What if I am wrong? What are the consequences if I am wrong?)

Dateiname = Titel

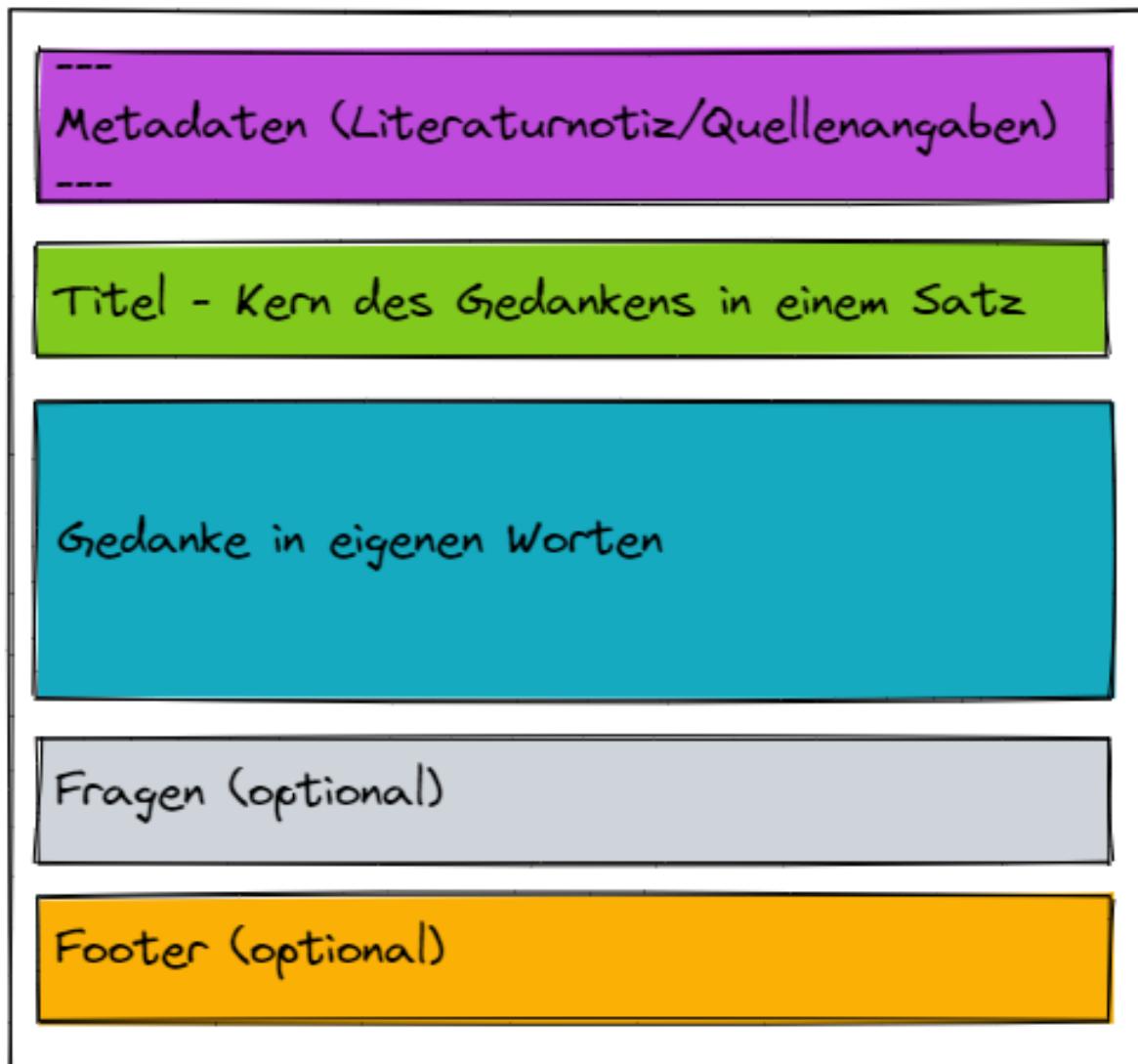


Abbildung 23: DNA of a note

6. questioning the original questions (Why did I think that? Was I right? What conclusions can I draw from the reasoning process?)

3.9.2 Exercises

- Going through your own notes and asking/noting questions
- Answer questions by
 - thinking about it/your own thoughts
 - going through your own notes
- Incorporating answers
 - create links between notes
 - If necessary, create new note as link between two notes

3.9.3 Reflection part

- How did you feel about the dialogue with your note box?
- What are the advantages of thinking in a note box?
- How can you make objective comparisons between parallel and conflicting thoughts in the Zettelkasten?
- How can you use the slip box as a conversation partner?
- What kinds of questions can I ask the Zettelkasten?
- How can I check the logic and reasoning in my conclusions?

3.9.4 Learning Objective

- Use the note box as a conversation partner
- Conduct discussions with the notebook to gain knowledge

3.10 Week 11 - Find your workflow

3.10.1 Theory

A workflow is of great benefit in staying on task and working more effectively. An established workflow helps to find a habit, use time more effectively, avoid distractions and focus on the task at hand. Habits require less energy and allow you to constantly optimize your work process. A Zettelkasten workflow



Abbildung 24: Workflow

should include steps such as collecting notes, processing notes, writing permanent notes, creating Map Of Contents, and thinking in the Zettelkasten. When thinking in the Zettelkasten, you should ask questions, find answers, generate new ideas, work systematically with the Zettelkasten, and connect knowledge systematically. To establish a workflow, you should first define a goal, list the tools you use, and put the steps in order. The steps and tools should be connected and the workflow should be reviewed and adjusted regularly to keep it up to date. A workflow stays alive if it is executed, reviewed and adjusted on a regular basis. Regularity in execution and review is important to ensure it is still current and meets your needs. Adjustments should therefore be made regularly to keep it up to date.

3.10.2 Exercises

- Think about creating one big workflow or several smaller ones for different areas.
 - e.g. collecting notes; distracting; thinking; writing texts
- define your goal, what the workflow should help you with
- write down which tools you use for working with your note box
 - note-taking environment
 - digital readers and utilities
 - list interfaces between tools
 - Books, ruler, markers, college block, etc.

- Create a rough flowchart that includes the steps you will take in the Zettelkasten process
- Add to the steps the tools you will need
- Check if you see potential for optimization in the flowchart
- Add details if they seem necessary to you

3.10.3 Reflection section

- Did you learn anything new while creating your workflow?
- What are the key benefits of an established workflow in relation to the notebook method?
- What are the most important factors in keeping a workflow alive?
- How can you ensure that your workflow is done by you on a regular basis?

3.10.4 Learning Objective

- Recognized that a good workflow is critical for lasting success.
- Understood that a notepad only comes into its own when it is continuously in use.
- You have your own workflow

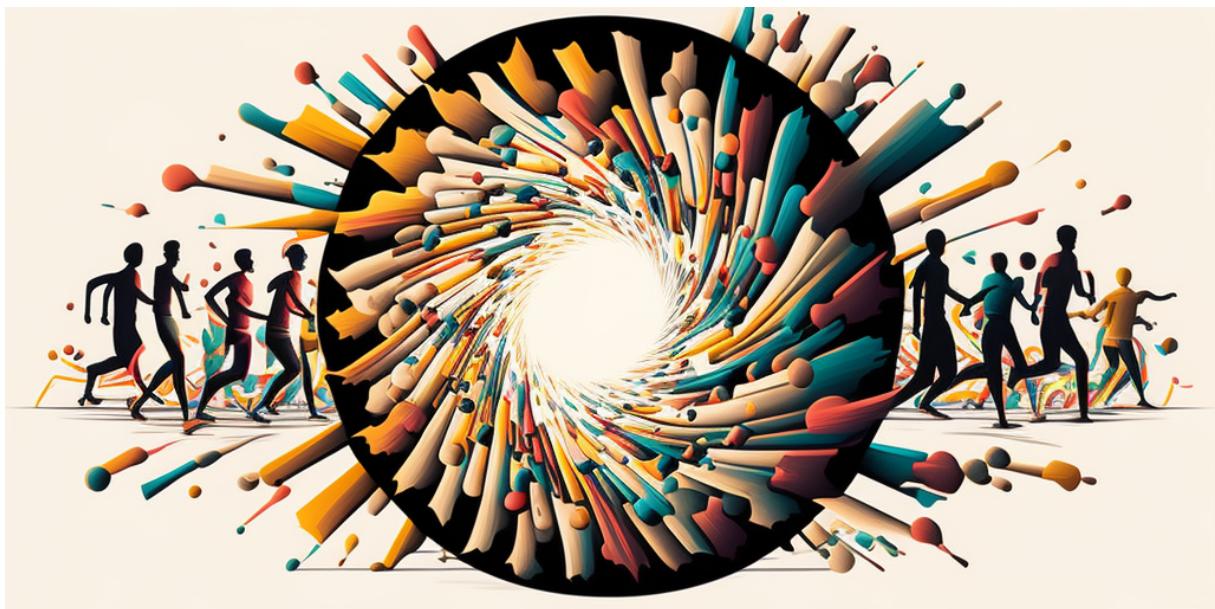


Abbildung 25: Retrospective

3.11 Week 12 - Retrospective

3.11.1 Theory

This week there is no clearly defined program with further exercises - now is the time to let the Sprint come to an end together.

Talk about the Circle and your experiences from the last weeks. Share what you learned and what the learning path did to you.

Wow, you did it and the Sprint is complete. Congratulations!

Where do you go from here?

Some Circles continue to meet regularly (e.g., every 2 bit 4 weeks). Topics from the learning path can be deepened again.

You may also have developed your own ideas in your Circle that you would like to work on in the future. Maybe you bring in ideas from your own fields of work, or you bring in ideas from other areas of interest. From these you create your own exercises. Discuss which activities you want to fill the weeks after the sprint with, because it is important to stick with it and to further consolidate the skills and the positive habits you have built up during the sprint.

Define bindingly how you want to proceed more wisely (appointments, tools, personal meetings, etc.).

3.11.1.1 Feedback You have successfully completed our learning path to the Zettelkasten and we would like to thank you for your time and efforts. In order to continuously improve our learning path and ensure that it meets your expectations, we ask you to provide us with your opinions and suggestions by answering a feedback questionnaire. Your feedback is important to us and will help us to better tailor our learning path to the needs of our participants. Please take a few minutes to fill out the questionnaire. Your answers will remain anonymous and will only be used to improve the Lenrpfad. We thank you in advance for your support and look forward to hearing from you.

Your feedback on the slip box method: suggestions for improvement wanted!⁵¹

3.11.2 Exercises

- Talk about the Circle and your experiences from the last few weeks. What did you learn and what did the learning path do to you?
- Answer the survey

⁵¹<https://www.surveymonkey.de/r/NQX55WN>

3.11.3 Reflection section

- Did you achieve your learning goal?
- Will you continue to fill and use the note box?

3.11.4 Learning goals

- Review of what you have achieved
- Outlook on how to continue

4 Appendix



What is Mark-Down?

Markdown is a markup language. This means that control characters are used in the text to indicate how the text should be displayed. So the control characters really go directly into the text. It could be compared to HTML⁵² or LaTeX⁵³. But don't worry, you don't have to program here, very few characters are enough and the programs then display the text without the control characters. To give you an idea of what this is all about, here is a practical example.

⁵²Web pages are described with HTML

⁵³A markup language used especially in science

On the left is the text with the formatting characters. On the right is what you then see in the display.

<h2># Überschrift</h2> <p>Das hier ist ein Beispiel. Und ein Link zu [[Beispiel 2]].</p>	<h2>Überschrift</h2> <p>Das hier ist ein Beispiel. Und ein Link zu Beispiel 2.</p>
--	--

The big advantage is that they are all text files (like the .txt extension you sometimes see on your computer). So they are readable on any system. The extension .md says only that syntax for interpretation is included in the format mark-down.

4.0.1 Control characters

Already with two control characters the text can be brought into a structure and notes can be connected with each other.

- #, ##, ###,, For overwritings
 - # first hierarchical level
 - # second hierarchical level
 - ## third hierarchical level etc.
- [note-name]] to create links to other notes -> branching

That's basically all you need to get started.

Here are a few more control characters that are very handy, but not necessary. Just use the ones you feel comfortable with and which you think you need as formatting.

- ****Bold formatted****
- **Cursive formatted**
- ===Marker Marked==
- \# -> Creates a TAG, something like a sticker
- [Text](http Link) -> Creates a link to any address. E.g. [Google](http://www.google.de)
- [Note]] -> Displays the contents of a note.
- -- -> creates a separator line

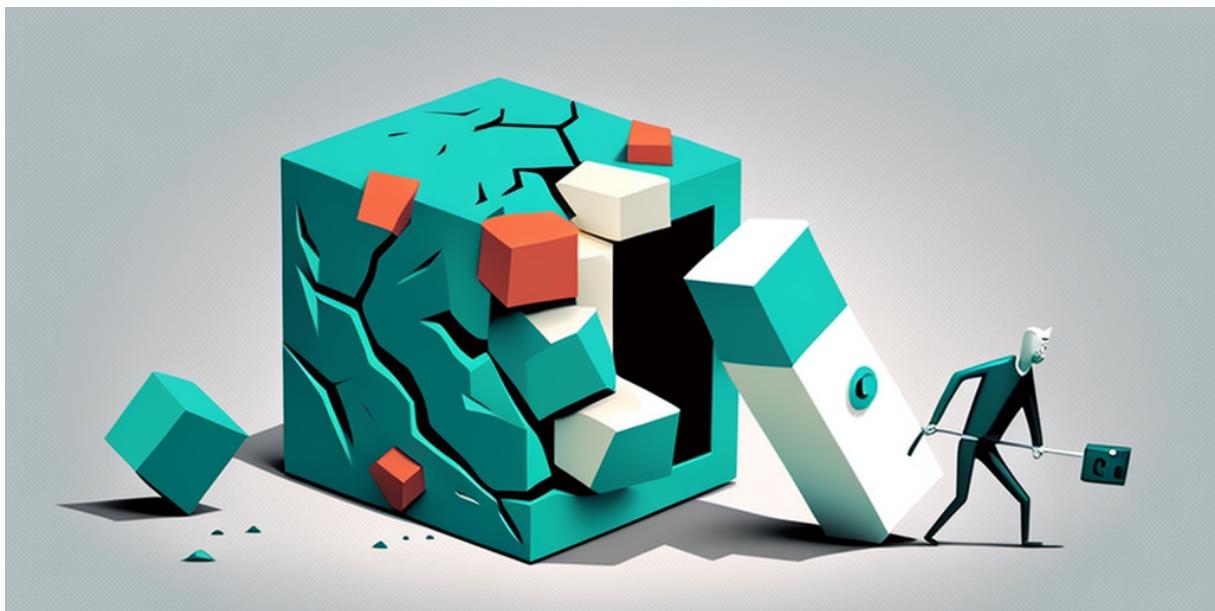
Some programs also offer you buttons for this like in WYSIWYG programs⁵⁴ (e.g. Word is such a program).

⁵⁴What you see, is what you get / What you see is what you get

4.0.2 Advanced mark-down syntax

- Metadata --
- Tables ||
- Comments %
- Citations >
- References ^
- Block references with ^ and #
 - ^ for blocks -> [[example#^reference]]
 - # for headings -> [example#heading]]

There are more MD syntaxes. If you are interested in more possibilities you can look them up here⁵⁵.



Change from proprietary format to Mark-Down

This is for you if you have not used mark-down before. There are many programs that use proprietary formats. Proprietary formats are formats created by a particular company or developer that can only be used with their products. An example of this would be the format of a note in the Evernote app that cannot be opened in other note apps.

Unfortunately, however, there are difficulties and risks associated with using proprietary formats. One of them is that you are trapped in a dependency on a particular company or developer, since you cannot change or export the format without using the corresponding product. Another risk is that the format may eventually be discontinued by the company or developer, which may mean that you can no longer open your notes. The accumulated knowledge is then lost.

⁵⁵<https://www.markdownguide.org/extended-syntax/>

One solution to this could be to implement a switching strategy. One possibility would be to create all new notes from now on in an open format like Markdown, in a suitable program. If one then later searches for old notes, one can search for them in the old program and then transfer them to the new program. The advantage here would be that the transfer only happens when it is really necessary and the energy is distributed for it.

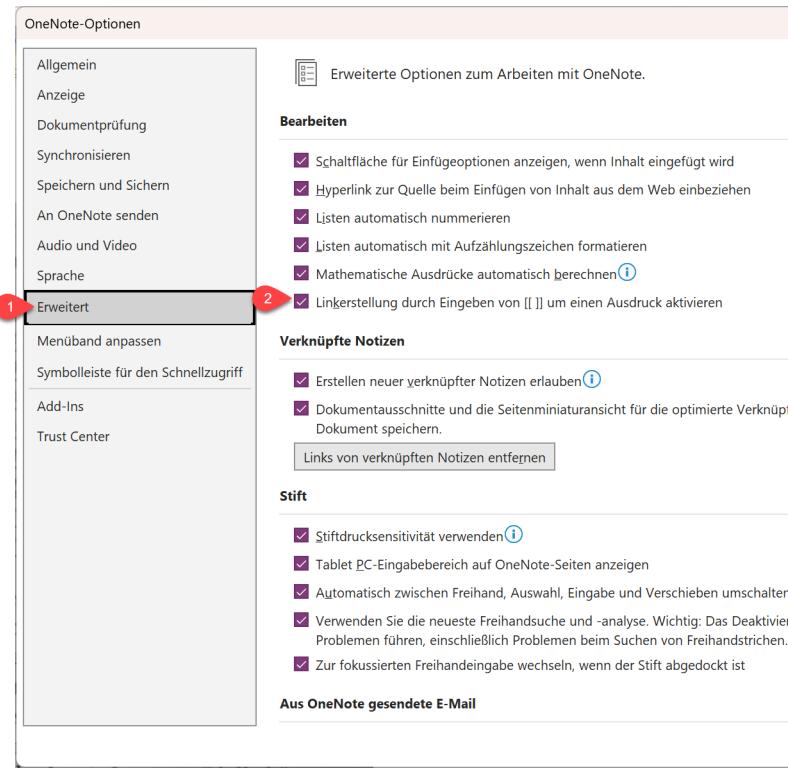
Another suggestion for a switch strategy could be to look for tools that can convert the proprietary format to an open format like Markdown. This way, you could export your old notes to a format that is supported by many different applications and you no longer have to feel dependent on a particular company or developer.



Guide to implement PKM with OneNote

Guide to implement PKM with OneNote, if more suitable tools (e.g. those from week 2) are not available, e.g. due to restrictions from IT policies in a company.

- use [[PAGE NAME]] to directly create links



- enable the wiki link function in OneNote

Beispiel verwendung Wiki-Links

Dienstag, 14. Februar 2023 21:45

[[Zettelkasten]]

Beispiel verwendung Wiki-Link

Dienstag, 14. Februar 2023 21:45

Zettelkasten

onenote:#Zettelkasten

- OneNote wiki link application

- all notes into one notebook
- tab "MOC" could be used to collect all MOCs
- create a separate page for each idea to be able to link specifically
- Use speaking titles for page titles



Acknowledgements

The guide was written by: Andreas Trebing⁵⁶, Friederike Schoeller-Frey⁵⁷, Maris Krobath⁵⁸

A big thank you for constructive feedback and corrections goes to:

- Moritz Meißner
- Stephan Diepolder

4.1 Change history

All changes to the guide can be found in the Release Notes on Github⁵⁹. The sources of all previous guide versions are also available there.

⁵⁶<https://www.linkedin.com/in/andreas-trebing-32872b143/>

⁵⁷<https://www.linkedin.com/in/frey-32753b67/>

⁵⁸<https://www.linkedin.com/in/martina-krobath/>

⁵⁹<https://github.com/cogneon/lernos-zettelkasten/releases>