

Sönke Ahrens

How To Take Smart Notes

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HOW TO TAKE SMART NOTES

One Simple Technique to Boost Writing,
Learning and Thinking

Revised and Expanded Edition 2022

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“One cannot think without writing.”

— Niklas Luhmann

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PREFACE FOR THE SECOND EDITION

A lot has happened since this book was first published in 2017. Most importantly: it found its audience. I discovered to my delight that I was not alone in finding the interconnected, decentralized, bottom-up approach of the Zettelkasten much more natural to work with than the linear, top-down approaches most of us learned in school and which are still baked into the majority of writing and note-taking tools.

Now, four years later, after the rise of a new generation of digital tools that enable bi-directional linking and the establishment of a growing community of note-taking enthusiasts, the idea of the Zettelkasten has spread across disciplines, professions and language borders.

With the rapidly changing landscape of available tools, I decided to keep the book as tool-agnostic as possible and stick with the example of Luhmann's paper-based Zettelkasten. Software can make things considerably easier and it is exciting to explore their features. But it also brings the risk of losing sight of what is most important and drawing us into a game of catch-up with the latest development. Books on note-taking have a different life cycle and should focus on the more timeless aspects of the topic – that's their advantage.

The audiobook and most of the translations are already based on this revised edition of 2022, which you hold in your hand. There are a few changes compared to the original 2017 edition. Firstly, I corrected a few mistakes some observant readers pointed out to me. In one case, I had a metaphor from chemistry wrong; in the other case, I embarrassingly repeated a story about pencils in space without realizing that it was debunked as an urban myth long ago. Thanks to everyone who wrote to me kindly and pointed that out! Along with some typos, there is actually a third small factual mistake I corrected, but as nobody has noticed it yet, let's pretend there was none. Secondly, I added a small appendix, which I hope will give you a better idea of what Luhmann's Zettelkasten looked like and what is crucial to keep in mind when we use digital tools. The

last addition is a table I often use in talks and which gives you an overview of the main differences between this approach and the traditional way of writing and note-taking.

INTRODUCTION

Everybody writes. Especially in academia. Students write and professors write. And nonfiction writers, who are the third group of people this book is aiming to help, obviously write as well. And writing doesn't necessarily mean papers, articles or books, but everyday, basic writing. We write when we need to remember something, be it an idea, a quote or the outcome of a study. We write when we want to organise our thoughts and when we want to exchange ideas with others. Students write when they take an exam, but the first thing they do to prepare even for an oral examination is to grab pen and paper. We write down not only those things we fear we won't remember otherwise, but also the very things we try to memorise. Every intellectual endeavour starts with a note.

Writing plays such a central role in learning, studying and research that it is surprising how little we think about it. If writing is discussed, the focus lies almost always on the few exceptional moments where we write a lengthy piece, a book, an article or, as students, the essays and theses we have to hand in. At first glance, that makes sense: these are the tasks that cause the most anxiety and with which we struggle the longest. Consequently, these "written pieces" are also what most self-help books for academics or study guides focus on, but very few give guidance for the everyday note-taking that takes up the biggest chunk of our writing.

The available books fall roughly into two categories. The first teaches the formal requirements: style, structure or how to quote correctly. And then there are the psychological ones, which teach you how to get it done without mental breakdowns and before your supervisor or publisher starts refusing to move the deadline once more. What they all have in common, though, is that they start with a blank screen or sheet of paper. But by doing this, they ignore the main part, namely note-taking, failing to understand that improving the *organisation* of all writing makes a difference. They seem to forget that the process of writing starts much, much earlier than that blank screen and that the actual writing down of the

argument is the smallest part of its development. This book aims to fill this gap by showing you how to efficiently turn your thoughts and discoveries into convincing written pieces and build up a treasure of smart and interconnected notes along the way. You can use this pool of notes not only to make writing easier and more fun for yourself, but also to learn for the long run and generate new ideas. But most of all, you can write every day in a way that brings your projects forward.

Writing is not what follows research, learning or studying, it is the *medium* of all this work. And maybe that is the reason why we rarely think about this writing, the everyday writing, the note-taking and draft-making. Like breathing, it is vital to what we do, but because we do it constantly, it escapes our attention. But while even the best breathing technique would probably not make much of a difference to our writing, any improvement in the way we organise the everyday writing, how we take notes of what we encounter and what we do with them, will make all the difference for the moment we do face the blank page/screen – or rather *not*, as those who take smart notes will never have the problem of a blank screen again.

There is another reason that note-taking flies mostly under the radar: We don't experience any immediate negative feedback if we do it badly. But without an immediate experience of failure, there is also not much demand for help. And the publishing market working how it works, there is not much help in supply for this lack of demand either. It is the panic in front of the blank screen that brings students and academic writers to turn to the bookshelves full of selfhelp books on writing, a market publishers meet in droves by focusing on how to deal with this horse-has-already-left-the-barn situation. If we take notes unsystematically, inefficiently or simply wrong, we might not even realise it until we are in the midst of a deadline panic and wonder why there always seem to be a few who get a lot of good writing done and still have time for a coffee every time we ask them. And even then, it is more likely that some form of rationalization will cloud the view of the actual reason, which is most likely the difference between good and bad note-taking. "Some people are

just like that,” “writing has to be difficult,” “the struggle is part of the deal” are just a few of the mantras that keep too many from inquiring what exactly distinguishes successful writing strategies from less successful ones.

The right question is: What can we do differently in the weeks, months or even years *before* we face the blank page that will get us into the best possible position to write a great paper easily? Very few people struggle with their papers because they don’t know how to cite correctly or because they suffer from a psychological issue that keeps them from writing. Few struggle to text their friends or write emails. The rules of citation can be looked up and there is no way that there are as many mental issues as papers postponed. Most people struggle for much more mundane reasons, and one is the myth of the blank page itself. They struggle *because* they believe, as they are made to believe, that writing starts with a blank page. If you believe that you have indeed nothing at hand to fill it, you have a very good reason to panic. Just having it all in your head is not enough, as getting it down on paper is the hard bit. That is why good, productive writing is based on good note-taking. Getting something that is already written into another written piece is incomparably easier than assembling everything in your mind and then trying to retrieve it from there.

To sum it up: The quality of a paper and the ease with which it is written depends more than anything on *what you have done in writing before you even made a decision on the topic*. But if that is true (and I wholeheartedly believe it is), and the key to successful writing lies in the preparation, it also means that the vast majority of self-help books and study guides can only help you to close the barn door correctly and according to official rules – not just a moment, but many months after the horse has already escaped.

With that in mind, it is not surprising that the single most important indicator of academic success is not to be found in people’s heads, but in the way they do their everyday work. In fact, there is no measurable correlation between a high IQ and academic success – at least not north

of 120. Yes, a certain intellectual capacity helps to get into academia, and if you struggle severely with an IQ test, it is likely that you will struggle to solve academic problems, too. But once you are in, a superior IQ will neither help you to distinguish yourself nor protect you from failure. What *does* make a significant difference along the whole intelligence spectrum is something else: how much self-discipline or self-control one uses to approach the tasks at hand (Duckworth and Seligman, 2005; Tangney, Baumeister, and Boone, 2004).

It is not so important who you are, but what you do. Doing the work required and doing it in a smart way leads, somehow unsurprisingly, to success. At first glance, this is both good and bad news. The good news is that we wouldn't be able to do much about our IQ anyway, while it seems to be within our control to have more self-discipline with a little bit of willpower. The bad news is that we do not have this kind of control over ourselves. Self-discipline or self-control is not that easy to achieve with willpower alone. Willpower is, as far as we know today,¹ a limited resource that depletes quickly and is also not that much up for improvement over the long term (Baumeister, Bratslavsky, Muraven, and Tice, 1998; Muraven, Tice, and Baumeister, 1998; Schmeichel, Vohs, and Baumeister, 2003; Moller, 2006). And who would want to flog oneself to work, anyway?

Luckily, this is not the whole story. We know today that self-control and self-discipline have much more to do with our *environment* than with ourselves (cf. Thaler, 2015, ch. 2) – and the environment can be changed. Nobody needs willpower not to eat a chocolate bar when there isn't one around. And nobody needs willpower to do something they wanted to do anyway. Every task that is interesting, meaningful and well-defined will be done, because there is no conflict between long- and short-term interests. Having a meaningful and well-defined task beats willpower every time.

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 1 The research on willpower or “ego depletion” is in a bit of turmoil at the moment. But it is safe to say that using willpower is a terrible strategy to get things done in the long run. For an overview cf. Inzlicht/Friese 2019.

Not *having* willpower, but *not having to use* willpower indicates that you set yourself up for success. This is where the organisation of writing and note-taking comes into play.

1 Everything You Need to Know

Until now, writing and note-taking techniques were usually taught without much regard to the overarching workflow. This book aims to change that. It will present you with the tools of note-taking that turned the son of a brewer into one of the most productive and revered social scientists of the 20th century. But moreover, it describes how he implemented them into his workflow so he could honestly say: “I never force myself to do anything I don’t feel like. Whenever I am stuck, I do something else.” A good structure allows you to do that, to move seamlessly from one task to another – without threatening the whole arrangement or losing sight of the bigger picture.

A good structure is something you can trust. It relieves you from the burden of remembering and keeping track of everything. If you can trust the system, you can let go of the attempt to hold everything together *in your head* and you can start focusing on what is important: The content, the argument and the ideas. By breaking down the amorphous task of “writing a paper” into small and clearly separated tasks, you can focus on one thing at a time, complete each in one go and move on to the next one (Chapter 3.1). A good structure enables *flow*, the state in which you get so completely immersed in your work that you lose track of time and can just keep on going as the work becomes effortless (Csikszentmihalyi, 1975). Something like that does not happen by chance.

As students, researchers and nonfiction writers, we have so much more freedom than others to choose what we want to spend our time on. Still, we often struggle the most with procrastination and motivation. It is certainly not the lack of interesting topics, but rather the employment of problematic work routines that seems to take charge of us instead of allowing us to steer the process in the right direction. A good, structured

workflow puts us back in charge and increases our freedom to do the right thing at the right time.

Having a clear structure to work *in* is completely different from making plans *about* something. If you make a plan, you impose a structure *on yourself*; it makes you inflexible. To keep going according to plan, you have to push yourself and employ willpower. This is not only demotivating, but also unsuitable for an open-ended process like research, thinking or studying in general, where we have to adjust our next steps with every new insight, understanding or achievement – which we ideally have on a regular basis and not just as an exception. Even though planning is often at odds with the very idea of research and learning, it is the mantra of most study guides and self-help books on academic writing. How do you plan for insight, which, by definition, cannot be anticipated? It is a huge misunderstanding that the only alternative to planning is aimless messing around. The challenge is to structure one's workflow in a way that insight and new ideas can become the driving forces that push us forward. We do not want to make ourselves dependent on a plan that is threatened by the unexpected, like a new idea, discovery – or insight.

Unfortunately, even universities try to turn students into planners. Sure, planning will get you through your exams if you stick to them and push through. But it will not make you an expert in the art of learning/writing/note-taking (there is research on that: cf. Chapter 1.3). Planners are also unlikely to continue with their studies after they finish their examinations. They are rather glad it is over. Experts, on the other hand, would not even consider voluntarily giving up what has already proved to be rewarding and fun: learning in a way that generates real insight, is accumulative and sparks new ideas. The fact that you invested in this book tells me that you would rather be an expert than a planner.

And if you are a student seeking help with your writing, the chances are that you already aim high too, because it is usually the best students who struggle the most. Good students wrestle with their sentences because they care about finding the right expression. It takes them longer to find

a good idea to write about because they know from experience that the first idea is rarely that great and good questions do not fall into their laps. They spend more time in the library to get a better overview of the literature, which leads to more reading, which means that they have to juggle more information. Having read more does not automatically mean having more ideas. Especially in the beginning, it means having fewer ideas to work with, because you know that others have already thought of most of them.

Good students also look beyond the obvious. They peek over the fences of their own disciplines – and once you have done that, you cannot go back and do what everyone else is doing, even if you now must deal with heterogeneous ideas that come without a manual on how they might fit together. All that means is that a system is needed to keep track of the ever-increasing pool of information, which allows one to combine different ideas in an intelligent way with the aim of generating new ideas.

Poor students do not have any of these problems. As long as they stick within the boundaries of their discipline and read only as much as they are told to (or less), no serious external system is required and writing can be done by sticking with the usual formulas of “how to write a scientific paper.” In fact, poor students often *feel* more successful (until they are tested), because they don’t experience much self-doubt. In psychology, this is known as the Dunning-Kruger effect (Kruger and Dunning, 1999). Poor students lack insight into their own limitations – as they would have to know about the vast amount of knowledge out there to be able to see how little they know in comparison. That means that those who are not very good at something tend to be overly confident, while those who have made an effort tend to underestimate their abilities. Poor students also have no trouble finding a question to write about: they lack neither opinions nor the confidence that they have already thought them through. They also won’t have trouble finding confirming evidence in the literature, as they usually lack both interest and skill to detect and think through disconfirming facts and arguments.

Good students, on the other hand, constantly raise the bar for themselves as they focus on what they haven't learned and mastered yet. This is why high achievers who have had a taste of the vast amount of knowledge out there are likely to suffer from what psychologists call imposter syndrome, the feeling that you are not really up to the job, even though, of all people, they are (Clance and Imes 1978; Brems et al. 1994). This book is for you, the good students, ambitious academics and knowledge workers who understand that insight doesn't come easy and that writing is not only for proclaiming opinions, but the main tool to achieve insight worth sharing.

1.1 Good Solutions are Simple – and Unexpected

There is no need to build a complex system and there is no need to reorganise everything you already have. You can start working and developing ideas immediately by taking smart notes.

Complexity is an issue, though. Even if you don't aim to develop a grand theory and just want to keep track of what you read, organise your notes and develop your thoughts, you will have to deal with an increasingly complex body of content, especially because it is not just about collecting thoughts, but about making connections and sparking new ideas. Most people try to reduce complexity by separating what they have into smaller stacks, piles or separate folders. They sort their notes by topics and sub-topics, which makes it look less complex, but quickly becomes very complicated. Plus, it reduces the likelihood of building and finding surprising connections between the notes themselves, which means a trade-off between its usability and usefulness.

Thankfully, we don't have to choose between usability and usefulness. Quite the contrary. The best way to deal with complexity is to keep things as simple as possible and to follow a few basic principles. The simplicity of the structure allows complexity to build up where we want it: on the content level. There is quite extensive empirical and logical research on this phenomenon (for an overview: cf. Sull and Eisenhardt, 2015). Taking smart notes is as simple as it gets.

Another item of good news regards the amount of time and effort you have to put into getting started. Even though you will change considerably the way you read, take notes and write, there is almost no preparation time needed (except for understanding the principle and installing one or two programs, if you go digital). It is not about redoing what you have done before, but about changing the way of working from now on. There is really no need to reorganise anything you already have. Just deal with things differently the moment you have to deal with them anyway.

There is more good news. There is no need to reinvent the wheel. We only need to combine two well-known and proven ideas. The first idea lies at the heart of this book and is the technique of the simple slip-box. I will explain the principle of this system in the next chapter and show how it can be implemented in the everyday routines of students, academics or other knowledge workers. Thankfully, there are digital tools for all major operating systems available that will help you to implement it, but if you prefer, you can also use pen and paper. In terms of productivity and ease, you will still easily surpass those who are taking not-so-smart notes.

The second idea is equally important. Even the best tool will not improve your productivity considerably if you don't change your daily routines the tool is embedded in, just as the fastest car won't help you much if you don't have proper roads to drive it on. Like every change in behaviour, a change in working habits means going through a phase where you are drawn back to your old ways. The new way of working might feel artificial at first and not necessarily like what you intuitively would do. That is normal. But as soon as you get used to taking smart notes, it will feel so much more natural that you will wonder how you were ever able to get anything done before. Routines require simple, repeatable tasks that can become automatic and fit together seamlessly (cf. Mata, Todd, and Lippke, 2010). Only when all the related work becomes part of an overarching and interlocked process, where all bottlenecks are removed, can significant change take place (which is why none of the typical "10 mind-blowing tools to improve your productivity" tips you can find all over the internet will ever be of much help).

The importance of an overarching workflow is the great insight of David Allen's "Getting Things Done" (Allen, 2001). There are few serious knowledge workers left who haven't heard of "GTD" and that is for a good reason: It works. The principle of GTD is to collect everything that needs to be taken care of in one place and process it in a standardised way. This doesn't necessarily mean that we actually do everything we once intended to do, but it forces us to make clear choices and regularly check if our tasks still fit into the bigger picture. Only if we know that everything is taken care of, from the important to the trivial, can we let go and focus on what is right in front of us. Only if nothing else is lingering in our working memory and taking up valuable mental resources can we experience what Allen calls a "mind like water" – the state where we can focus on the work right in front of us without getting distracted by competing thoughts. The principle is simple but holistic. It is not a quick fix or a fancy tool. It doesn't do the work for you. But it does provide a structure for our everyday work that deals with the fact that most distractions do not come so much from our environment, but our own minds.

Unfortunately, Allen's technique cannot simply be transferred to the task of insightful writing. The first reason is that GTD relies on clearly defined objectives, whereas insight cannot be predetermined by definition. We usually start with rather vague ideas that are bound to change until they become clearer in the course of our research (cf. Ahrens, 2014, 134f.). Writing that aims at insight must therefore be organised in a much more open manner. The other reason is that GTD requires projects to be broken down into smaller, concrete "next steps." Of course, insightful writing or academic work is also done one step at a time, but these are most often too small to be worth writing down (looking up a footnote, rereading a chapter, writing a paragraph) or too grand to be finished in one go. It is also difficult to anticipate which step has to be taken after the next one. You might notice a footnote, which you quickly check on. You try to understand a paragraph and need to look up something for clarification. You make a note, go back to reading and then jump up to write down a sentence that formed itself in your mind.

Writing is not a linear process. We constantly have to jump back and forth between different tasks. It wouldn't make any sense to micromanage ourselves on that level. Zooming out to the bigger picture does not really help, either, because then we have next steps like "writing a page." That does not really help with navigating the things you have to do to write a page, often a whole bunch of other things that can take an hour or a month. One has to navigate mostly by sight. These are probably the reasons why GTD never really caught on in academia, although it is very successful in business and has a good reputation among the self-employed.

What we can take from Allen as an important insight is that the secret to a successful organization lies in the holistic perspective. Everything needs to be taken care of, otherwise the neglected bits will nag us until the unimportant tasks become urgent. Even the best tools won't make much of a difference if they are used in isolation. Only if they are embedded in a well-conceived working process can the tools play out their strengths. There is no point in having great tools if they don't fit together.

When it comes to writing, everything, from research to proofreading, is closely connected. All the little steps must be linked in a way that will enable you to go seamlessly from one task to another, but still be kept separate enough to enable us to flexibly do what needs to be done in any given situation. And this is the other insight of Allen: Only if you can trust your system, only if you really know that everything will be taken care of, will your brain let go and let you focus on the task at hand.

That is why we need a note-taking system that is as comprehensive as GTD, but one that is suitable for the open-ended process of writing, learning and thinking. Enter the slip-box.

1.2 The Slip-box

It is the 1960s, somewhere in Germany. Among the staff of an administration office is the son of a brewer. His name is Niklas Luhmann. He went to law school, but he has chosen to be a public servant, as he did not like the idea of having to work for multiple clients. Fully aware he is also not suited for a career in administration, as it involves a lot of socializing, he