Summary of «Ultralearning» by Scott H. Young

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The cutting-edge guide that teaches you how to implement an aggressive learning tool that allows you to master seemingly-impossible skills in record time.

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Introduction

Who is Ultralearning for?
- Anyone looking to quickly master a new skill
- Anyone who wants to future-proof their career
- Anyone who enjoys practicing work with intention and depth

The book begins with many examples of people who have found success through practicing the ultralearning strategy. While these testimonies are extreme, you can still benefit from the principles of this strategy.

1. Scott Young, the author of Ultralearning, was able to learn MIT's four-year computer science curriculum in just one year without taking any classes. He also accomplished learning four languages in just one year. He called his projects The MIT Challenge and The Year Without English.
2. Eric Barone who became an overnight success after learning the skills to develop an online game eventually becoming a self-made millionaire.
3. Nigel Richards who became the French Scrabble World Champion without speaking French.

Each person adopted this self-directed strategy to accomplish challenging tasks that were difficult and time-consuming. While your ultralearning project doesn't have to turn you into an overnight success like Eric Barone, it can still help you acquire skills for personal fulfillment or help you gain a professional edge.

In a fast-paced world, it is now more important than ever to adapt and retrain to stay relevant and competitive in the workplace. The most desired workers can master a variety of skills whether it's speaking more than one language, or understanding more than one computer program. You can stand out in the workplace by diversifying your skills without spending time and money on furthering your education and qualifications.

You probably have many questions about how Ultralearning works. The following summaries will breakdown the nine principles of Ultralearning and plan out how to implement your own Ultralearning project.

Metalearning-Draw a Map

No matter your project, there is one crucial step that must not be skipped. Draw a Map. In other words, you must learn how to learn you chosen subject, also known as "Metalearning." Metalearning is about breaking down your chosen subject into steps that will help you achieve your goal and master your new skill. You need to look at the bigger picture and plan out how you are going to get there. The easiest way to do this is by asking yourself three things. "Why?" "What?" and "How?"

So *why* should you learn about what you are learning? Simple, so you can be sure you get what you want once your project is done. Looking for a promotion at work? Once you learn about the skills involved in getting that promotion, you can learn a specific skill that will help you achieve that goal.

Once you've determined *why* you want to learn something new, you will need to figure out *what* you will need to learn. One way to do this is by structuring what you need to learn by separating the subject into three categories: concepts, what needs to be understood; facts, what needs to be remembered; and procedures, what needs to be practiced. Once you break down *what* you need to learn you'll need to determine *how* you are going to learn it.

The first step of figuring out *how* you will learn your chosen subject, is by drawing a metalearning map, or breaking down what you need to learn into key concepts, or procedures. For example, when learning a new language, the key concepts may be pronunciation, spelling, and grammar.

Once you have drawn out your map and chunked the information, you will need to identify which procedures might prove to be the most difficult for you and figure out how you are going to overcome those challenges. If throughout your breakdown process it is revealed that you will need to memorize many facts, then you might consider a procedure involving flash cards or spaced-repetition software to enhance your memorization.

Metalearning is all about setting you up for success. Without proper planning, then the execution of learning will be difficult. Typically, dedicate 10% of the total time for your project to metalearning. Once you have drawn your roadmap for your ultralearning project, you can focus on what is important and strengthen your skills.

Focus-Sharpen your Knife

Now that you've set to start your ultralearning project, you must combat two inevitable obstacles that you will encounter: procrastination and distraction. How are you going to do this? With distractions coming in all forms in today's world with cell phones, social media, etc., how are you going to fight distraction? How are you going to stop procrastinating? Simple: get started.

The main challenge in beginning your project? Getting started! Therefore, it is important to trick yourself into starting your project by setting a time for a few minutes. Tell yourself that after just a few minutes, you can stop working. However, you might find that after those few minutes that you have built up momentum and want to continue working.

You can then build on this concept by setting a timer for longer intervals, say twenty to thirty minutes. Work for the allotted time and when the timer goes off, take a five-minute break. Then get back to work for another twenty or thirty minutes.

The next challenge in working is maintaining that focus and momentum. Therefore, it is important to eliminate distractions by turning off your cell phone or using noise-canceling headphones to hone in on your focus on what you are learning, depending on what that new skill is, it is important to determine the best way to eliminate distractions.

Next, you will want to use a process called "interleaving" to organize how you learn and complete your project. Interleaving involves alternating between materials and modes of learning. It is best to chunk time into short sessions rather than spend several hours in one day on a project. For example, if you have eight hours a week to devote to learning, you will want to spend two hours a day for four days, rather than spend one eight hour session devoted to your project. Then, you will want to focus on a different skillset throughout each session, so if you are learning a new language, focus on spelling or vocabulary one session then focus on grammar the next.

Once you have limited your distractions and tricked yourself into getting started, you will find how implementing these techniques will make you more productive than you ever thought you could be.

Directness-Go Straight Ahead

One of the biggest struggles to learning something is lack of confidence. You feel that you aren't as qualified as others, so what's the point? However, that's not true, everyone has to start somewhere. The easiest way to combat this hurdle is by diving right in. Go straight ahead and learn by diving into what it is you want to learn. The most direct way to learn something is by doing, so ultralearners must practice directness to reach their goals. For example, the most effective way to learn a language is by speaking the language, similarly, the most effective way to learn how to build a website is by building a website. This project-based method is a hands-on application tool involving learning by doing.

The easiest and most extreme way to practice directness in learning is through immersion. A student wishing to learn Spanish might live in Spain for three months to completely immerse themselves in the language and learn more quickly. By moving to Spain, this learner is applying a completely immersive approach to learning.

However, not every learner may have time to completely immerse themselves by moving to another country, luckily, there are many ways to manipulate your environment to get the immersion experience. You don't see pilots completely immersing themselves and flying planes immediately, and this is for good reason! Instead, pilots learn through replicating the flying experience through simulation. For their safety, they get an immersion experience without directly flying a plane.

There are many ways that you can take this example and apply it to your ultralearning project. If learning a language is your goal, you can immerse yourself through Skype tutors or real-life tutors to teach you through speaking the language. Once you have identified how to replicate the immersion environment, you can begin a direct approach to learning and be on your way to completing your ultralearning project.

Drill -Attack your Weakest Point

Throughout your ultralearning journey, you may find yourself asking, "why am I not progressing as quickly as I expected?" "Why am I hitting a dead end?" You will inevitably hit this point throughout your project, but there are techniques to tackle this hurdle and overcome your slowing progress.

This is where drilling to hone and perfect your skills will come into play. You've heard the phrase "practice makes perfect" your entire life. Well, there's a reason it's a popular phrase, it works. When learning a skill, many steps will need to be completed to master your project. To complete the next step, you will need to have mastered the previous steps, and the best way to master them is by drilling.

Drilling involves breaking down the steps and identifying where your progress is slowing down. Once identified, you will want to practice that step over and over until it is mastered. Basically, you will need to identify the step that unlocks the next level of knowledge and move you forward in your project. For example, you may have mastered the spelling and grammar in a language, but lack the pronunciation skills to begin speaking the language. In that case, pronouncing words and sounds would be your rate-determining step, so you'd focus your drilling in this area.

There are many ways to begin drilling your skills. If you find that you can isolate your skills into one area, then you will want to use the slicing technique. Slicing is like learning how to perfect your backhand in a tennis game. You will drill your backhand by continuously practicing and only using your backhand to return serves. Repetition is the main focus when using the slicing technique, perfect for learning vocabulary, pronunciation, or grammar in a language.

Of course, isolation isn't always the best way to drill your skills. When working on more creative or complex projects, you may need to use the copycat method instead. For example, when trying to become a copywriter, it is near impossible to isolate different skills, so using the copycat method

to drill your skills will work best. Simply find a popular copy of the niche you are working on and emulate it as closely as you can.

Direct practice and drilling are essential when trying to ultralearn, and they work hand in hand when trying to complete your project. Dive into your project directly, identify your weaknesses, drill your skills, and complete more direct practice until you find your next area of weakness. Using this method will help deliver the best results in your journey to ultralearning.

Retrieval-Test to Learn

Do you struggle when learning a new skill? Does this discourage you from continuing to learn? Don't let it! In fact, struggling is a good thing, it shows that you are more likely to retain the information. If you want to remember something, you have to actively practice to remember it. And like going through school, you will need to test yourself at some point to ensure that you are remembering and retaining the information in the long run.

While many students practice reviewing the material before a test, this is not the most effective way of retaining information. Why might students prefer this method? Well, by reviewing the information they already know, they believe that they have learned the information. However, this ease of reviewing is not effective for retaining information. Instead, you should be recalling information to ensure you are learning. You may struggle more when recalling, but struggling to recall in the short term means you are more likely to remember the information in the long term. Therefore, struggling is a good thing.

There are a few ways to recall information effectively. The first is by using flashcards, but a more effective strategy is using free recall. This is where you read or study and once done try to write down everything you just learned. This may be incredibly difficult but that is why it can be the most effective.

Another way is to avoid taking notes while studying or reading, and instead, ask questions. Try to answer the questions at the end of your session and refrain from looking up the answer if you feel the need. This active struggle will help you retain the information for long-term recall.

Finally, you should create a challenge for yourself to practice later. Set a task that will test everything you've learned throughout your ultralearning project. This approach will help target your skills and recall specific information that directly applies to your long-term goals.

Feedback-Don't Dodge the Punches

How do you know if you are progressing in your learning? You can set benchmarks and test yourself, but another great tool is to receive feedback. Not only is receiving feedback an important step for your progress, but it is also essential to distinguish between the types of feedback that you receive. It is important to put yourself in a position to fail to get constructive, useful feedback. You need to push yourself past your limits to elicit the most useful type of feedback. In fact, not all feedback is equal and you must know which type of feedback is the most useful.

There are three types of feedback, the first and most simple form of feedback is outcome feedback. This feedback determines whether or not you have reached the desired outcome. For example, a comedian on stage might tell a joke and the audience laughs. While this may be encouraging and is certainly the desired outcome, it is not the most constructive form of feedback.

A more constructive form of feedback is informative feedback and can highlight the areas you need to improve and work on. For example, a comedian on stage might be wishing to entertain the audience and make them laugh, but if several audience members get up and walk out in the middle of the performance, this is informational feedback and allows the comedian to see where he may have gone wrong. By isolating your mistakes, you can use this informational feedback to improve your skills.

The third and best form of feedback is corrective feedback. Let's say the comedian had a mentor in the audience who was taking notes throughout his performance, telling him the good, the bad, and the ugly. The mentor can highlight areas that need improvement and give quality tips on how to work on those weaknesses. This is corrective feedback and is far more constructive and useful than any other form.

Feedback from peers and feedback from yourself is the best way to ensure that you are on your way to completing your ultralearning project goal. It is

important to continue adjusting your methods and improving your skills throughout your journey.

Retention-Don't Fill a Leaky Bucket

Remembering specific events and things that happened in the past can be difficult over time, do you remember every story from your childhood? Exactly, our memory decays over time, we can perhaps remember something that happened recently, but that same memory will eventually fade over the years. Similarly, you may still remember an event from years ago very clearly but can't remember what you had for lunch yesterday. If the memory has a significant meaning, then you are more likely to remember it.

However, this theory isn't the only theory about why we remember certain memories and not others. Another theory, interference, suggests that our memories are similar to hard-drive on a computer. Our minds can only hold so much space and older memories have to be replaced by newer ones. While there are several theories as to why our memory fades over time, ultralearners need to prepare for this memory loss by repeating skills to remember them effectively.

The best way to incorporate a memorization strategy that works is to settle on a technique and incorporate it at regular intervals. The intervals will need to be implemented closely together to avoid forgetting the necessary information over time. It's also best to avoid cramming memorization techniques, just like cramming for a test hardly produces effective results.

For memorizing techniques, one of the best ways to ensure effective memorization is to use a Spaced Repetition System (SRS). Flashcards are a great way to test your knowledge by chunking information in a randomized manner. You can also use SRS software which randomizes the information for you by using an algorithm.

For procedural memorization, one way to recall things is to complete it so many times that it becomes second nature. Similar to typing, if you repeat a procedure several times, then your body will begin to automate the process.

While forgetting information is a fact we must live with as humans, you can come up with ways to recall information to help you retain it longer. Additionally, these techniques will help you complete your ultralearning goal more efficiently.

Intuition-Dig Deep Before Building Up

How is it possible to develop intuition? Intuition may seem like an innate ability to instinctively understand your field of study, but it certainly can be a learned skill. While intuition in your field of study may not develop right away, you can implement certain techniques to become an expert in your field and possess the ability to instinctively understand your subject.

You can begin your journey to developing this intuition by remembering the foundations. It is impossible to know the ins and outs of a subject if you don't know the basics. How can you learn a new language without being familiar with the alphabet? While the alphabet is simple in nature, it is key for understanding the phonetics and pronunciation of a language. So, in order to become an expert in your field, you need to know the inner workings and remember the basics.

When learning gets difficult, it's important to not give up. In fact, when faced with a difficult problem, that is when the most learning occurs. Additionally, if you come across two ways to solve a problem, avoid taking the shorter avenue. It is important to struggle and take a long avenue to solve the problem since it will lead to better learning and understanding. If you find that a problem is too difficult, set a timer. Force yourself to struggle for ten minutes, and if you don't solve the problem during that time, you'll be more likely to remember the answer when you do find it.

Another way to deepen your understanding is by looking to the experts in your field. Find the experts and recreate their results, not by trying to disprove them or simply following them, but through exploring their process and trying to figure it out yourself. This may take several attempts but will lead to you overcoming obstacles and learning how to struggle.

Don't just follow the experts, try to understand them! In order to gain an intuition about your subject, you need to really know it. Asking questions and recreating your own problems will help you develop that intuition and become an expert yourself.

Experimentation-Explore Outside Your Comfort Zone

While author Scott Young uses Van Gogh as an example of a person who struggled in his craft and worked tirelessly to become an accomplished artist, there are several examples of people failing before succeeding. For instance, Walt Disney was once fired for lacking imaginative ideas, however, he is now known for being one of the most creative individuals in his field. By working hard and ignoring doubt, Walt Disney was able to create success for himself by finding what worked for him and continuing his journey.

Finding what works for a person requires constant experimentation. How do you know which career is right for you? How do you figure out how to lose weight successfully? You experiment and practice. You continue working on something until you achieve your goals or realize that what you are doing is not working and you change it. You will need to apply the same experimentation techniques to your ultralearning process, and while this may seem overwhelming, there are some techniques that you can easily implement into your journey.

One technique is to copy then create which involves following someone else's example and then building on those same skills. Once you have the basics down, you will then be able to begin experimenting and finding out what works for you. Once you have mastered the skill, you can either compare methods or try something completely new. Experimenting with new methods allows you to push your boundaries and accelerate your learning.

Experimentation involves more than just figuring out what works for you. Additionally, you should be experimenting with the resources you use and when figuring out your next step. Resources should be evaluated after using them for a certain amount of time to see if it is the best resource to use, if not, then experiment with new resources. Then, when figuring out your next step in your project, you might wonder what to try next. By experimenting and trying new things, you will see if you have the knowledge to

move in the direction you wish. If not, then you will know that there are gaps in your knowledge, and you easily know how to fill those gaps.

Experimenting can benefit you in the learning process when you try new things and find new avenues to complete a step, you are building on your knowledge. Even if you don't succeed at first, it's important to never give up. Just because it didn't work the first time, doesn't mean it won't work the second, third, or even fourth time. It may take several attempts at experimenting to find something that works, but you will learn throughout the process and ensure that your final ultralearning project is successful.

Final Summary

By now you might be thinking that you want to attempt your own ultra-learning project, but there are a few key concepts you should know before you begin. You will need to research and map out your goals using the metalearning techniques. Then, focus and optimize your learning through implementing the directness, drilling, retrieval, feedback, and retention techniques. Finally, become an expert and elevate your learning through cultivating intuition and experimentation throughout your project.

While ultralearning may seem overwhelming and seemingly impossible, the reality is that anyone can adopt this aggressive, self-directed learning style to master a new skill. If you are looking to get started, you should keep the following key concepts in mind.

Be sure to complete lots of research. Plan, plan, and plan some more. Decide on a skill that you want to achieve and make sure it aligns with either your personal or professional goals. If you are looking to hone your professional skills, it may be beneficial to interview an expert in your field. Understand the ins and outs to help you decide on a skill that accurately aligns with your field. For example, when it comes to coding language, figure out which code is used in the area you are interested in and go from there.

Once you plan and do some research, you'll want to schedule a time for yourself to complete your project. Figure out a reasonable timeline and find chunks of time in your schedule that you can use to complete your project. More importantly, begin by giving yourself a deadline. You will find that you are more likely to accomplish your goals if you have a strict deadline to adhere to. Give yourself a test week to try out your schedule, then make adjustments throughout your project when necessary.

Lastly, always be a student. While ultralearning may not work for every student, you can find new ways to learn to better yourself personally and professionally. By elevating your quality of life, you can achieve more than just

acquiring a new skill, you can acquire satisfaction in yourself and ultimately achieve lifelong happiness.

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