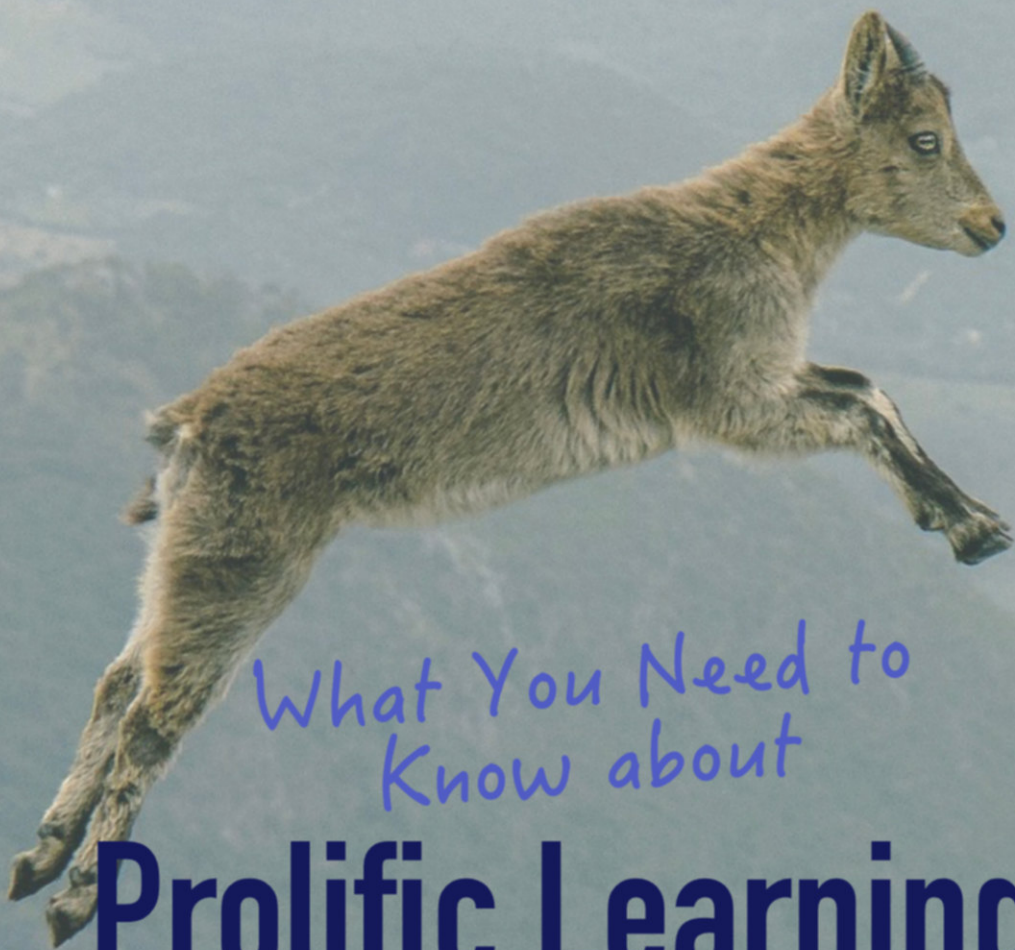


Prolific Learning Series Volume 2
Steven R. Stuve, Ph.D.



What You Need to
Know about

Prolific Learning

For All Ages

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What You Need to Know about Prolific Learning For All Ages

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Release History

Electronic Version 1.0 released April 30, 2020.

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This book is the second volume in this series. It builds on material in the first volume. The rest of the volumes focus on particular topics and skills. You can get copies of the other volumes from the **prolific-learning.com** website. The latest version of all books in the series will be on the website.

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Chapter 1

What is Prolific Learning?

Do you know what the word *prolific* means? I could read a dictionary to you, but I will give you examples instead. A tree that grows very large and is filled with leaves is prolific. A forest that is filled with many trees, plants, and animals is prolific. A family of rabbits having many baby rabbits until they fill a field is prolific. A blueberry bush that is full of scrumptious blueberries is prolific. I think you are probably getting the idea. When something is prolific, it is growing and producing things. It might be growing larger in size. It might be

growing larger in numbers. The main thing is that it is healthy and growing and fruitful.

Have you ever known someone who is an excellent gardener? They are often an older person with gray hair who has been doing it for decades. They have learned a lot about gardening. They know what each type of plant needs to grow. They know how to tend plants. They know what type of soil each plant needs. They know how far apart to plant seeds. They have learned how to help every plant grow as best as it can. They know about vegetables, fruits, and flowers. When they plant a garden, it will grow much better than most gardens. They will get more produce from it and their flowers will be more beautiful. They will be able to raise many different types of plants. Their garden will be prolific.

What will happen if you give some plant seeds to an excellent gardener and to someone who doesn't know how to garden? The person who doesn't know how to garden will plant the seeds. The problem is that they don't know how best to plant them. They might put them into the soil too

deep or not deep enough. They might put them too close together. They won't know the best time in the spring to plant them. They won't know how to care for the plants as they grow. At the end of the growing season, they might have some produce. But they might not. They didn't know what to do. The excellent gardener will know exactly what to do. The excellent gardener's seeds will turn into a prolific garden.

What do you think will happen if someone becomes an excellent learner? It is like being an excellent gardener except for learning things instead of growing gardens. An excellent learner will be able to do many more things than a normal learner. They can start with the same material as an ordinary learner but will accomplish much more. Their learning will be prolific. I am going to call an excellent learner a *prolific learner*. I will say *prolific learning* when talking about their exceptional ability to learn.

Here are some examples. A person who can speak several languages is a prolific learner. A person who can play several musical instruments is a

prolific learner. A person who can use many different programs on a computer is a prolific learner. A handyman who knows how to repair everything around a house is a prolific learner. Prolific learners can do things that most people think are amazing.

Some people think that prolific learners are special. They think that prolific learners are very smart or have special talent. Others think that prolific learners are very disciplined and work very hard. They see prolific learning as something that only special people can do. I used to believe that too. But as I studied prolific learning, I realized that anyone could do it.

Prolific learning is a skill that anyone can practice. If you practice it enough, you will start to become a prolific learner. In the rest of this book, I'm going to tell you some of the things you need to know to get started.

This book is meant to be a special gift to my grandchildren. I want them to be able to become prolific learners as they grow. I don't want them to face the discouragement and frustration that many

experience in school. I want them to be able to learn anything that they want to. What makes this gift special, is that they can turn it into anything they want to. It won't wear out but it will grow and change and become even better over the years.

Some presents you get are ready to go. You can open the package and start using them. Others require some assembly. This one requires much assembly. In the following chapters, I will give you some of the basic parts you need. In later books, I will give you more parts and instructions for how to start assembling things. It's up to you what you want to make.

Chapter 2

The Foundations of Prolific Learning

Author's Note: This chapter is a summary of material covered in Volume 1 of this series.

There are two things you must understand to be a prolific learner. You must understand how your brain works and you must know how to choose good methods of learning.

What is learning? It is when something unfamiliar becomes familiar to you. Anything new starts out unfamiliar. As you learn about it, it becomes more and more familiar. That feeling of

getting used to something is what learning feels like.

How does learning occur? Your brain is slowly building complicated structures of storage and retrieval. It is storing memories of things. It is retrieving them so you can use them. At first, the structure is small with few parts. This is when something is unfamiliar. As the structure grows and becomes more complicated, something becomes more familiar. As the structure grows even larger and more complicated, you start to master something. You cannot rush this. Your brain does it at its own pace.

You can help your brain learn. You do this by choosing good methods of learning. A method is like a recipe for cooking. A cookie recipe makes cookies and a cake recipe makes cakes. You have to choose methods that do what you really want to do. Many people choose the wrong methods and waste much time and effort.

Some methods work better for some people than others. You need to learn which methods work best for you. You cannot just copy what

someone else is doing. You will probably have to experiment and try different methods to see what works best for you.

From Unfamiliar to Familiar to Mastery

When something is unfamiliar, you need to find a good method to start learning. As you put in time and effort, your brain will start to build a structure of storage and retrieval. Things will become somewhat familiar. You'll start to outgrow the first method and it won't work as well.

When something is somewhat familiar, you need to find a new method that will help it become more familiar. You might have to experiment to find a good one. Then as you put in more time and effort, your brain adds to the structure. Things become more familiar. At some point, you'll probably start to outgrow this method.

This is how learning progresses. You choose methods that help you learn for what stage of progress you are at. Your brain keeps building a more and more complicated structure of stor-

age and retrieval. What you are learning becomes more and more familiar to you.

Choose Good Methods that Work With Your Brain

The rest of this book contains guidelines and advice to help you choose good methods that will work for you. You should always consider how any method is helping your brain build a good structure that makes things more familiar.

Prolific Learning is Enjoyable and Effective

As you learn to choose good methods that work with your brain, you will find learning can be enjoyable and effective. You will want to keep on doing it. You will make good progress. You will see satisfying results for your time and effort.

Chapter 3

Build a Learning Toolbox

Have you ever seen an excellent woodworker make something? They have many tools that they know how to use. Through practice and experience, they can make many quality objects. Have you ever seen an excellent painter? They have many brushes and other tools that they know how to use. In fact, anyone who is skilled at something usually has many different tools that they can use.

Prolific learners have a toolbox with tools that they use to learn. Their tools might be methods, books, or other things that help them

learn. Through practice and experience, they have learned to use these tools.

Some tools work for one particular thing you are learning. For example, prolific learners who know many different languages have discovered methods that help them learn new languages. They have some methods that help them get started. They have some methods that help them improve. They have some methods that help them improve reading skills. They have other methods that help them improve speaking skills. They have many tools that they've used before. They have experience and practice using those tools. That is why they can learn many languages.

Some tools work for anything you learn. For example, knowing how to reduce stress and relax works for anything. When you are learning something new, there will be times when you are frustrated. When you are frustrated, your brain doesn't work as well. Knowing how to relax will help your brain work better. This is a tool that will work for anything you are learning.

I'm writing this series of books to give you some tools to use for prolific learning. Some of these tools will be useful for you and some will not. You will discover which are useful over time. You will learn more from others. You will probably invent some of your own. Each time you use a new method or try something new, you are trying out a new tool for your toolbox.

Chapter 4

Have a Positive Attitude

Think about what it feels like when you are doing something you like. You are probably enjoying yourself and having fun. You might be relaxed or excited or both. You want to keep going. You lose track of time. When you are done, you cannot wait until you can do it again. You might want to tell someone about it.

Prolific learners make sure that they enjoy what they are doing. It's because when you enjoy doing something, you'll want to keep doing it. You'll be excited to get back to it the next day. Your brain also works much better when you enjoy yourself. If you do not enjoy it, you are not going to

want to keep doing it. Also, your brain does not work as well when you don't like what you are doing.

An important word to know is *stress*. Stress happens when you do not like something around you. You might be scared, sad, or angry. You might start to feel a headache or stomachache. You might feel yourself tense up. You might make fists or push your feet against something. You might find it hard to think clearly or talk. When you have stress, your brain does not work very well. You cannot learn. You might start to freeze up and not be able to think. Some kids have stress when taking a test in school. It feels like they forget everything they learned. Some kids have stress when they get in front of a crowd to speak. It feels like their tongue and mouth don't want to work and they forget what they want to say. When you have stress, you cannot learn very well.

When you are relaxed and enthusiastic, your brain works well. This is how you want to feel when you are learning. When you feel like this, it is easier to learn. You need to get used to this feel-

ing. You need to quickly notice when stress happens and do something about it.

When I'm learning, I sometimes get frustrated and have stress. I notice a few things happen. My jaw starts to tighten up. If I am holding a book, I start to grip it harder. Sometimes I hold my breath. As soon as I realize this is happening, I do something about it. The first thing I do is stop and take a deep breath. I'll stop working for a few moments. I tell myself that this is supposed to be fun. Sometimes I laugh a little bit because I forgot I was doing something I enjoy. Sometimes that is enough and I can get back to work. Other times, that does not work. I might have to get up and take a short break. If that doesn't work, I just stop working and come back to it the next day.

When you feel stress, you need to figure out what to do. What works for me might work for you, but it might not. We are each different. You might need to ask yourself *why* you feel that way. If you can answer that, it might help you. Sometimes it helps to talk to a grownup you trust.

To become a prolific learner, you need to be aware of how you are feeling. You need to learn what it feels like when you have a positive attitude and enjoy learning. A prolific learner has fun learning. Having a positive attitude is something you must practice. The more you practice it, the easier it will be and the more natural it will feel.

Chapter 5

You Cannot Schedule Progress

There is a hiking trail called the Appalachian Trail. People who hike it call it the AT. (They pronounce AT like the letters A and T). It is over 2000 miles long. It goes through forests, over mountains, and across streams. Many people hike it each year. Some people hike the entire trail. Others hike just part of it. Do you know how they hike it? They hike it one step at a time. Taking one step after another adds up. Each step seems small, but they add up. You can hike 2000 miles by taking one step at a time.

There is something important experienced AT hikers have learned. They tell this to new people. They say that “you must hike your own hike.” In order to walk hundreds of miles, you have to do it in a way that works for you. You have to walk at a pace comfortable for you. You have to rest when you need to. You have to carry the equipment you need to. You have to eat what you want to eat. You have to see the sights that you want to see. If you try to do it like someone else, it will be much harder and you will probably quit. If you hike your own hike, you will go much further and enjoy it much more.

You Need to Find Your Pace

Prolific learners know that they have to have a comfortable pace for learning. They know how much they can do each day. If they do too little, they don't make much progress. If they do too much, they will get tired out. They also know that some parts of learning are easy. They work faster then. They know some parts of learning are chal-

lenging. They work slower then. Each learner has a different pace that is best for them. No one can tell you what pace is best for you. You have to figure it out for yourself. Prolific learners do *NOT* compare themselves to others. They work at their own pace. They do not worry if someone else is faster. They focus on finding a pace that works best for them.

There is a reason why learning at your own pace is best. When you are learning, your brain is building a complicated structure of storage and retrieval. Your brain does this at its own pace. You cannot rush your brain. If you try to rush your brain, you will damage or distort the structure. It won't do what you want it to do. Have you ever worked on a jigsaw puzzle and had someone come up and scatter the pieces? That is what happens if you try to rush your brain.

The Benefits of a Good Pace

When you have a good pace, your attitude will usually stay positive. You look forward to learning the

next day. Of course, we all have good days and bad days. But if your pace is too fast, your attitude will start to suffer. You will start to get tired of learning. You might get frustrated more often as you work. It usually becomes harder and harder to keep going.

When you have a good pace, you will make progress. You will feel like you are learning more and improving. You will feel things becoming more familiar. You will find there are more things that you know and can do.

Progress is Usually Gradual With a Few Sudden Jumps

Most of the time, you will feel a little more comfortable each day. Things will just slowly become more familiar. However, once in a while, you will see a sudden jump forward that surprises you. As your brain is building a structure of storage and retrieval in your brain, you usually will feel things become a little more familiar each day. But sometimes, your brain completes part of the structure

and connects it to another part and it can suddenly do something completely new. Instead of one step at a time, you might be surprised by a giant leap forward once in a while.

I'm going to tell you a story of my progress when I was learning touch typing. This is knowing how to use a keyboard without looking at the keys. This was so long ago I was using a manual typewriter. At first, I just slowly learned where each key was. When I typed something, I would just type one letter at a time. To type the word *the*, I would type the letters T, H, and E. Each day, I got a little better. The keys become more familiar to me. I was able to type a little faster. It felt more comfortable. But I was still thinking and typing one letter at a time. One day when I typed the word *the*, something strange happened. I didn't think T, H, and E. I just thought the word *the* and my fingers just typed it. I was surprised. Over the next few days, that started to happen with more words. Within a month or so, I was able to type most words by just thinking about the word. I didn't have to spell them out letter by letter in my head.

What happened was this. My brain was building a structure that had things like memories of the keys, where they were, and how it felt to push them. Each day, my brain added to the structure. Individual keys became more familiar. As this structure grew, I was able to just think about a letter and my fingers would type it. At first I could only do this for common letters like A, E, S or T, but gradually more letters because familiar. Then my brain started adding to the structure in an unexpected way. It started associating an entire word with moving my fingers. At first it only worked for small words like *the* and *are*. But it quickly started happening for longer words. I didn't try to learn this. It just happened.

When you are learning something, most of your progress will be gradual. You will just become a little more familiar with something each day. Then once in awhile you will be surprised when you can do something you could not do before.

Plan Ahead for What You Can Do

Many hikers who start the AT learn a hard lesson about progress. Some start the trail with many goals and deadlines. They decide that they will hike a certain number of miles every day. They want to reach a certain place by a certain date. They start out hiking at a pace to reach those goals. But most of them very quickly discover something. They cannot reach those goals because they cannot walk that fast. They also discover something else. They often miss enjoyable sites. They are in such a hurry, that they will skip scenic overlooks or nearby towns. They miss out on experiences that they would have enjoyed. They miss out on enjoying part of the journey.

If they want to walk hundreds of miles, they have to walk at a pace that is comfortable for them. If they want to enjoy the hike, they have to stop and see enjoyable places. After a few weeks, they learn to *plan* ahead. They know what pace is comfortable and how far they can walk each day. They now know what to expect for progress. They can

plan ahead based on how far they can actually walk. They can also change their plans based on what is happening.

Prolific learners have learned to plan ahead. They do not set specific goals and timetables for their progress. They first learn what their comfortable pace is. They then know what to expect. They can then plan ahead. They have a destination in mind, but they enjoy the journey of learning. They enjoy each step of progress.

You Get Stronger As You Go On

Hikers who find a good pace discover something else. They become stronger as they hike. Over time, they find that they can hike faster and further. It takes time for this to happen.

Prolific learners discover that the more they learn, the better they become at learning. Their pace naturally speeds up because they are becoming better at learning. This does not happen overnight. It does not happen because you over-

work yourself. It is a natural process of learning how to learn and becoming better at it.

Chapter 6

You are Unique

There are two things that make you different from everyone else. First, you were born different from everyone else. Second, your experiences in life are different from everyone else. These two things make you unique.

Have you noticed that some people act differently? Of course you have. We call this our *personality*. Our personality is just the way we typically act. Some people like to be quiet and others loud. Some like to be around people and some prefer to be by themselves. Some like to sit and think while

others want to be active. We each have a different personality.

Author's Note: This discussion is based on work done by the Gallup Foundation. A few books such as *Now, Discover Your Strengths* by Marcus Buckingham and Donald O. Clifton, Ph. D. contain much helpful information about our individual strengths.

We each have different ways we prefer to do things. I'm not talking about skills like sewing, reading, running, or singing which you can learn. I'm talking about things inside of you like how you think, how you get along with people, and how you like to get things done. These are called *traits*. Some grownups who studied this found over 30 different traits. Here are a few examples. One trait is that you like to think about things. Another trait is that you listen very well. Another trait is that you want to get started doing things. Another trait is that you carefully do things step by step. We all have different combinations of these traits that we are good at. These come from a combination of how we were born and our experiences.

The grownups who studied these traits learned something important. They found that we like to

use the traits we are good at. They found that when we use our strongest traits to do things, that we are much happier and we are better at what we do. This means that when we use our best traits to learn, we will be much better at it.

Prolific learners figure out how to use their traits to learn. They figure out the ways that they learn best and use those. It takes time. They also learn what they enjoy doing most. They also learn what they don't like doing and what doesn't work very well.

Being different also means that we are interested in different things. Some things sound like fun to learn about. Other things do not. Some things sound like to fun to do. Other things do not. Prolific learners focus on things that they are interested in. They learn skills that they want to learn.

There is one more thing I will tell you about. Remember that everyone else has their own traits and interests. Don't discourage someone because they have different traits and interests. Learn to see what they are good at doing. Encourage them and

help them. This is how strong teams are formed. Each member is good at something that the others are not. It can sometimes be frustrating to work with someone whose interests and traits are different. But when people with different strengths and interests can learn to work together as a team, it can be a very strong team.

You are unique. Your experiences, how you were born, your traits, and your interests make you different from everyone else. To become a prolific learner, you need to learn more about yourself. You need to learn what your traits and interests are. If you do things that fit someone else's traits and interests, you won't learn as much. Prolific learners use their own traits and interests when they learn.

Chapter 7

Learn in Context

Imagine someone gives you a jigsaw puzzle that is a picture of a forest. They have put the pieces into a bag and hidden the box. You cannot see what the finished picture is. What will you see if you look at a single piece? Some pieces might have some leaves. Others might have flowers. You might be able to make out some small details in some pieces. But you won't know what the entire picture looks like. In order for each piece to make sense, you need to see where it fits into the entire puzzle.

The word *context* means the big picture that gives something meaning. A single piece of a jigsaw puzzle needs the entire picture to make sense.

If you learn many things without context, they will be like a pile of puzzle pieces. If you learn many things in context, they will be like a completed jigsaw puzzle.

Prolific learners learn new things in context. When they learn in context, learning is easier and it works better. It makes it easier to apply what they learn. It makes it easier to remember what they learn. It makes it easier to learn more things. To learn in context, you must be patient and let your brain learn at its own pace.

Most people learn out of context. People do this for different reasons. Some are impatient. Some have a deadline to meet. Some don't know any better. When you learn out of context, you can memorize things faster. You can work harder and harder and force your brain to remember more. The problem is that you forget them faster. Also you often can't use what you've learned to do anything. Most people learn out of context because it helps get better grades in school. Most people get so used to this that they don't even know about learning in context.

Imagine you have ten words that you need to learn. Something like this often happens in school. You might have one week to learn them and then take a test. You might be given the words and have to write down the definition. Let's say one of the words is *ubiquitous*. It sort of sounds like you-bick-wit-us. Ubiquitous means that something occurs everywhere. The way most people do this is that they memorize the definition. They will write down the definition and repeat it over and over to themselves. They are memorizing it. They will do this with all the words. At the end the week, they take their test. The next week they start memorizing the next set of words. As weeks go on, they forget most of the words they memorized.

A prolific learner will do it differently. They might look up a word like ubiquitous and then write down some sentences using it. Traffic lights are ubiquitous in cities. Cows are ubiquitous on farms. Teachers are ubiquitous in schools. Trees are ubiquitous in forests. Words are ubiquitous in books. Each day, they take a minute or so to read the sentences a few times. Every few days,

they might add another sentence. That's it. They don't work hard forcing themselves to memorize the sentences. They just read the sentences a couple of times per day and don't worry about how much they remember. Something interesting happens. Their brain just gets used to seeing the word ubiquitous being used. It becomes familiar and they find that they can start to use it. They might see it while reading and they will just know what it means. One day, they might notice something like how many mosquitoes they see in the summer. They might catch themselves saying, "mosquitoes are ubiquitous this time of year."

That is the difference between learning in context and out of context. What is the context for a word? It is a sentence it will be used in. A dictionary can help you understand what a word might mean in different sentences, but the context for a word is a sentence. The more your brain sees a new word in context, the faster it will become familiar. The person who learns out of context will probably get better grades but soon forgets the words. The person who learns in context will gain

the use of many words for life. This is why prolific learners want to learn in context. They don't learn words to pass a test. They learn words to be able to use them the rest of their life.

This applies to anything you want to learn. Math equations are best learned applying them to solving problems. Guitar chords are best learned playing them in songs. Cooking recipes are best learned while cooking with them. Practice seeing what you are learning in the context it will be used in.

Chapter 8

Adapting as Needed

Some parts of the world have four distinct seasons. They have a hot summer, a cold winter with snow, spring, and fall. In the winter, you wear coats and warm clothes when you go outside. In the summer, you might wear shorts and a t-shirt. On a sunny day, you might use sunscreen to prevent sunburn. On a rainy day, you might use an umbrella and wear boots to stay dry. You are *adapting* to the weather.

Imagine what would happen if you only wore winter clothes all year round. You would be miserable in summer. You might even get sick be-

cause you are too hot. What would happen if you wore summer clothes in the winter? You might get frostbite or hypothermia. We must adapt to the weather to be comfortable and safe.

Prolific learners know how to adapt when they are learning. As you learn and make progress, things change. You must change with them if you want to make progress. Do you remember when you started reading? You needed to use picture books. As you gained reading skills, you could start to read easy chapter books. As you gained more reading skills, you could start to read harder chapter books. This is adapting. What would have happened if you hadn't adapted? You'd still be reading picture books.

Adapting is a skill that you learn. You get better at it the more you do it. The first thing you do is see the need for a change. The next thing you do is think about different ways you might change. You then use one of those ways to change. It takes awhile to learn how to do this, but you will get better at it.

How will you know you need to change? You might notice what you are doing seems boring or stale. You might be getting tired of it. You might not be getting any better at something. You might be getting frustrated. It's sometimes just a sense that you need to move on and do something different.

How will you know what to do next? You will need some new ideas about what to try. You might have some ideas. You can ask several people for ideas. You can look up ideas in books or online. Sometimes there will be one new idea that seems better than the others. Sometimes not. Sometimes you might have to experiment with a few new ideas and see which ones work.

When you start doing something new, it doesn't mean you have to stop doing something old. When you started reading chapter books, it didn't mean you had to quit reading picture books. You probably just start finding that chapter books were fun and just gradually stopped reading picture books. It means that you start doing something new in addition to the old.

It takes time to learn how to adapt when learning. You get better at it each time you do it. You will get a better sense of when to adapt. You will get a better sense of what types of changes will work the best. There is *not* a right way or a wrong way. There are just ways that work better than others. As you practice, you will start using better ways more often.

Chapter 9

Choose Good Methods

A method is a way of doing something or making something. A method for making food is called a recipe. A cookie recipe makes cookies. A cake recipe makes cake. A bread recipe makes bread. Every type of recipe makes one thing. The same thing is true for any method. It makes one thing. If you want to make something, you must be sure you pick the right method!

Prolific learners are very good at choosing good methods. They know how important it is. If you pick a good method for learning something, you will get what you want. If you pick a poor method, you will not get what you want.

Most people don't understand how important this is. They just start learning and work hard. If they don't seem to be learning much, they work even harder. If they still aren't learning much, they might start blaming themselves. They might think they are too lazy. They might think they are stupid or don't have talent. That is not true. The only thing they did wrong was to use a poor method. If they had used a good method, they would have learned a lot.

I've already talked about this earlier in this book and in more detail in the first volume of this series of books. I've mentioned it again and again because it is so important. Picking your method is like getting onto an airplane or a train. You need to be sure it is heading to the destination where you want to go. If you pick wrong methods, you will not get to the destination you want.

Prolific learners think very carefully about what they really want to learn. Most people might think, "I want to learn to speak Spanish." They will just pick some method and start working hard. It will probably be a poor method for them and

they won't be able to use Spanish very much. They might memorize many things, but they won't gain skills. After awhile, they will probably give up and think that language learning is very hard. A prolific learner knows that they want to learn skills. They want to read, listen, speak, and write Spanish. They will probably use several different methods so they can gain these skills. This is part of why prolific learners have much more success learning than most people.

Chapter 10

Help Your Brain Thrive

There are many ways you can help your brain thrive. Prolific learners help their brain as much as they can.

One way to help your brain is to do healthy things. When your body is healthy, it helps your brain be healthy. Eating right, exercising, and getting enough sleep all help. Reducing stress helps too. Reducing the time you spend watching TV and interacting with smart phones or computers helps. Reading more books helps. There are many resources that talk about these things. You can learn more from them.

Prolific learners know that they are trying to help their brain build new structures of storage and retrieval. They choose learning methods that help. They know their brain needs to see new things to store them. They know they have to practice doing things so their brain retrieves things. They know their brain only does this a certain amount at a time before it needs to rest. They cannot rush it. Each day, they let their brain get familiar with the new things. Each day, they practice using the new things. Their brain slowly builds a structure of storage and retrieval. The new thing they are learning becomes more familiar. They get better at the new skill they are learning.

Imagine a group of construction workers building a house. They first pour the foundation. They then add the wood frame for the floor, walls, and roof. They put in the floor so they can walk around to work. They add wires and pipes before they put in the walls. They then add the walls and the roof. They then add trim and put on doors. There are many things they must do in a certain order. If they do this, they will build a good quality

house. This is why prolific learners take their time and let their brain learn at its pace. This is why they learn things so well.

Now imagine if they were in a hurry. They might do things out of order. Things would not fit together. There might be leaks in the walls or roof. Some parts of the house might fall apart. The foundation might crack and part of the house might collapse. This is what happens when you try to hurry your brain. It cannot build a quality structure of new learning. This is why you forget things and have trouble learning a new skill.

You also need to know your brain needs to rest. It is like when you have been exercising hard and your muscles start to ache. Your brain can only work for so long before it needs rest. We often call this our attention span. Our brain rests either when we sleep or do something else. Our brain lets us know when it needs to rest. It becomes hard to concentrate and remember things. Sometimes our brain just starts to wander. Once our brain needs to rest, it does not work very well. Many people get used to this feeling and think this is what learning

is supposed to feel like. This is not what effective learning feels like.

We are each different and our brains all work differently. Your brain will work at a different pace than others. You need to let your brain work at its pace. Prolific learners know what pace their brain works at.

Chapter 11

Using Skills to Learn

There are two different types of things you can learn, skills and information. A skill is something you do. You might want to sing, paint pictures, use a computer, speak another language, or whittle wood. Information is facts you learn about things. You might want to learn about animals, geography, or outer space.

Prolific learners spend most of their time using skills. If they want to learn to do something new, they start using the new skill. If they want to get better at something, they keep practicing that skill. If they want to learn new information, they

usually do it while using a skill. They rarely learn information by memorizing it. They become familiar with new information as part of using skills.

Ask a grownup about what they remember from history or some other class in school. They will remember some things, but they will probably have forgotten most things they memorized. They memorized hundreds or thousands of facts and passed their tests. Years later, most grownups have forgotten most of the facts they memorized. Now ask that same grownup about their favorite subject. They can talk a long time about it. They remember much about it. It doesn't matter if they liked school or not. They will still know a lot about their favorite subject.

How can one grownup forget so many things from school and yet remember so many things about their favorite subject? It is because there are two ways to learn information. You can memorize information or you can become familiar with information. When you repeat things over and over to memorize them, you usually forget most of them. When you become familiar with things

through enjoyable repeated exposure, you usually remember most of them.

Imagine you get a new game that has twenty different types of game pieces. You need to know what all twenty do to play the game. How do you learn them? You'll read the instructions and start playing the game. At first, they will all be unfamiliar. But what happens after you play awhile? You become familiar with what they all do. You might still have to look at the rules and instructions at times because you don't remember. But after you have played the game many times, you will know what all twenty pieces do. You enjoyed what you were doing and your brain became familiar with it.

Imagine you have a list of twenty words to learn for a class. What do you usually do? You memorize them. You work hard by repeating them over and over. Once you can remember them, you will probably have to review them. What happens when you stop reviewing? You start forgetting them. This was hard work and your brain didn't like it. As soon as it can, it starts forgetting things.

You might have a subject you know a lot about. It might be dinosaurs, cars, animals, geography, nature, a favorite story, your favorite sports team, or your favorite hobby. You know many facts about it. If someone asks a question, you can probably answer it. You can explain many things about it to someone. How did you learn all this? You became familiar with it. How did this happen? You were using a skill you enjoyed. You might have been reading a book or watching a video about it. You were thinking about what it was. You might have talked with someone else about it. You might have done other activities. The one thing you probably were *not* doing was repeating it over and over to yourself to memorize it.

This is why prolific learners can learn so many things. They do not work hard memorizing and reviewing facts. They spend their time doing things they enjoy and letting their brain become familiar with things. Prolific learners use skills. As they use skills, they get better at the skills and they become familiar with information.

Chapter 12

Improving Quality

Imagine a picture on a refrigerator drawn by a child. Now imagine a famous painting in a museum. Imagine hearing a middle school band. Now imagine hearing a national symphony orchestra. Imagine watching kids play soccer during recess. Now imagine watching the World Cup finals. What is the difference? The difference is *quality*.

Quality is the idea that something is better or more desirable in some way. The food prepared by a master chef is of higher quality than from someone who doesn't cook very much. A profes-

sional athlete is more skilled than a high school athlete. An experienced photographer takes better pictures than someone taking selfies. This is what quality is about. As you learn a skill and improve, your quality improves.

Quality is hard to measure. Quality is an idea sort of like comfort. What makes a chair comfortable? You can try to describe the chair as being soft or something. But what makes it comfortable is that you have a good feeling sitting in it. Different people will have different opinions about what is comfortable. Quality is similar. It is when you feel good about something and like it better than something else. It is difficult to explain why.

Many people believe that quality and progress have to be measured by tests. The problem is that tests do not directly measure quality. I think everyone would agree that a quality music concert has no mistakes. Let's say a high school band has a concert with no mistakes. Does that mean it has the same quality as a national symphony orchestra performance with no mistakes? No. You can measure certain things *about* quality, but it is not possi-

ble to measure quality itself. If you focus on tests, you stop worrying about quality and start worrying about the tests. This is why so many students spend their time memorizing information to pass tests instead of becoming familiar with information to have something useful for life.

Prolific learners usually measure their progress by quality. Do they feel good about what they do? Do they feel like they are getting better at it? Are they satisfied with what they do? Prolific learners celebrate whenever they make progress. They see the quality increasing. They know they can always get better but are comfortable with what they've accomplished. Sometimes they might use tests to improve at certain things, but they don't forget about quality.

This book is part of a home-made gift I am creating for my grandkids. I wish to leave them a legacy of learning. It's what I wish I'd have known my entire life. The website **prolific-learning.com** is my workshop so to speak. I want it to be like the real workshops where many grandkids spend enjoyable hours puttering and learning from their grandpas. I decided to share this with other families. It's where I'll be putting various things as I work on them. It will have free resources, videos, and information available.

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