

The Benefits of Learning Something New

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https://www.huffingtonpost.com/2015/03/03/inspirational-quotes_n_6786978.html

Objectives

1. List the benefits of life-long learning
2. Describe how the continual challenge of learning new things ultimately helps you learn
3. Identify learning strategies that can be shared to help others learn

Application...

- Yourself
- Students
- Colleagues
- Employees

My Perspective

- Long time teacher of Microbiology and Immunology tasked with teaching Hematology for the first time
- Awareness of disconnect between teacher (expert) and student (novice)
- Wanting to help students overcome frustration of learning something new



“Your life does not get better by chance, it gets better by change.”

<https://simplyresonate.com/are-you-change-resistant-or-change-ready/>

– Jim Rohn

"We cannot become what we want by remaining what we are" - Max DePree

"If you want something you've never had, then you've got to do something you've never done"

"Be the Change that you wish to see in the world"
- Mahatma Gandhi

"Life will only change when you become more committed to your dreams than you are to your comfort zone" - Billy Cox

YOU'RE IN A RUT WHEN nothing about what you do **interests or excites you.** You feel you could do it with **your eyes shut. Sometimes** your eyes really are shut.

https://www.slideshare.net/rogerpacker/how-to-get-out-of-a-job-rut

One Way to Get Out of Your Rut and Change = Learn Something New!

And Keep on Doing that for the Rest of Your Life!

Lifelong Learning

Who, What, Why and How?

Theodore Roosevelt



- President from 1901-1909
- Authored >35 books, numerous essays and speeches, and 150,000 letters from 1882 - 1918
- Read on average 1 book/day, often several books at a time
 - Wide genres from classic and contemporary fiction and poetry to ancient philosophy, military history and natural history
 - Read in multiple languages
 - Amassed 1000's of books
- Learning = personal enjoyment and path to professional success

http://www.theodorerooseveltcenter.org/Learn-About-TR/TR-Brief-Biography

Shaquille O'Neal



- Drafted 1st overall in 1992 by Orlando Magic
 - Named "Player of the Week" in his 1st week in the NBA
 - 1993 Rookie of the Year
 - 1st rookie to start in All-Star Game since Jordan in 1985
- Won three NBA titles with Los Angeles Lakers, named MVP for all 3 finals series
- Bachelor's degree in 2000; MBA in 2005; EdD in 2012
- 5 studio Rap albums; 1 platinum
- Starred in movies and TV shows including 2 reality shows
- Bond investor, real estate entrepreneur, global spokesman for Krispy Kreme

Abigail Adams



- Had no formal education; taught to read and write at home with access to libraries of father and grandfather
- Avid reader: Philosophy, theology, Shakespeare, classics
- Learned French reading books
- Gave advice to husband John
- Pushed for equal status for women in education and legal rights (“remember the ladies”)
- Lifelong correspondence with John and others and a target of opponents
- “Strength of intellectual and moral character” – Thomas Jefferson

“Learning is not attained by chance, it must be sought for with ardor and diligence.”

<http://www.firstladies.org/biographies/firstladies.aspx?biography=2>

Louis L’Amour



- Dropped out of school at 15; traveled around American west working odd jobs; later became a merchant marine
- Always reading... found library in new town, skipped meals to save money to order books
- Scribbled notes about experiences
- Authored 120 Western novels and collections of short stories and poems

Lifelong Learning – What?

“A process of gaining knowledge and skills that continues throughout a person’s life” – Macmillan Dictionary

- Learning that is not restricted to young people in a classroom, but takes place throughout life and in a variety of situations
- Ongoing learning from daily interactions with other people and the world
- Learn on your own according to your goals

“The More Things You Read, The More Things You Will Know. The More That You Learn, The More Places You’ll Go.” -Dr. Seuss

“Reading is to the mind what exercise is to the body.” - Joseph Addison

Lifelong Learning – Why?

- Professional relevance
- Higher earnings/lower unemployment
- FUN!
- Improved confidence
- Rewarding to understand something difficult
- Has to become habit – requires work, set goals
 - Momentum or Habit Tracker

<https://hbr.org/2017/01/make-learning-a-lifelong-habit>

Benefits of Learning a New Skill

- Brain chemistry changes
 - Denser myelin (white matter) = learn more
- Learn faster
 - Increased neural pathways and impulses travel faster
- Make connections between skill areas
 - New knowledge builds on existing knowledge
- More interesting person

<https://ccsuconed.wordpress.com/2017/01/23/the-top-7-benefits-of-learning-a-new-skill/>

Benefits of Learning a New Skill

- Fights boredom
 - Learn new things and keep interest level high
- Adapt better to change
 - More varied life experience = easier to adapt to change
- Less likely to develop dementia
 - Learn new skills = decreased demyelination

https://centricconsulting.com/lifelong-learners_series/

Rush Memory and Aging Project

- Increased cognitive activity
 - Slowed decline in cognitive function
 - Decreased risk of mild cognitive impairment
 - 2.6 times less likely to develop Alzheimer's disease and dementia
 - Increased perceptual speed, visuospatial ability, and semantic memory

Bennett et al. Overview and Findings from the Rush Memory and Aging Project. *Curr Alzheimer Res.* 2012 9:646-663

When was the last time you did something for the first time?

More Benefits of Learning Something New

- Fun (how often do you do something for fun?)
- Sense of accomplishment and pride
- More time
 - Better time management
- Meet new people/new friendships
- Increased self-esteem
- Personal growth (different neural pathways)
- Discover hidden talent

<https://www.lifestyleupdated.com/2012/05/11/learning-something-new-7-benefits/>

More Benefits...

- Access to new and different opportunities
- Earn more money by adding to marketable skills
- Rejuvenate working life
- World is ever-changing; if we stop learning, we stagnate
- Challenge yourself

<https://www.jonlebreton.com/single-post/2014/09/10/7-Reasons-Why-Learning-New-Things-Is-Important>

Learning...

- Fuels creativity – make connections between unrelated things
- Triggers ideas in other areas – curiosity + creativity
- Overcome fear – our minds exaggerate the negatives
- Reduces stress

https://www.huffingtonpost.com/entry/a-look-at-the-incredible-benefits-of-trying-new-things_us_59196b49e4b02d6199b2f129

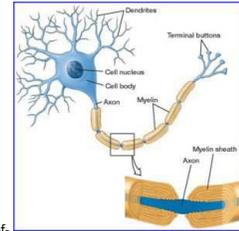
Science of Practice

- Learning new skill changes brain wiring = myelination
 - More myelin on axons = increased speed and strength of nerve impulses: signal is forced to jump across myelin sheath to next open spot on axon
 - As we age, myelination happens slower and requires more effort

<https://lifehacker.com/the-science-of-practice-what-happens-when-you-learn-a-510255025>

Science of Practice

- More practice = more myelin
- Practice has to be correct to myelinate correct axons
 - Correct mistakes through feedback
- Demyelination occurs in neurodegenerative diseases and dementia



<https://biofoundations.org/the-importance-of-maintaining-the-myelin-sheath/>

Is it too Late?

- Learning an instrument improves cognitive skills in children that are maintained to adulthood (<https://news.nationalgeographic.com/news/2014/01/140103-music-lessons-brain-aging-cognitive-neuroscience>)
- Education level is associated with cognition and episodic and semantic memory and reading ability is associated with working memory (*J Am Geriatr Soc* 2011 59:1403-11)

Never Too Late to Learn

- “Intellectual challenges experienced across the whole life span may increase the brain reserve and be crucial for the occurrence of dementia symptoms in late life”. (*J Alzheimers Dis* 2007. 12:11-22)
- “Sustained engagement in cognitively-demanding, novel activities enhances memory function” (*Psych Sci* 2013 25:103-112)

Why Don't we Want to Learn Something New?

Resistance to Learning

- Fear of failure
- Frustration
- Don't like not being good at something
- Forgot how to learn
- Time

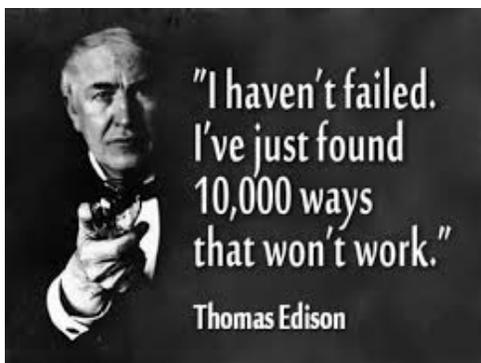
Overcoming Frustration

- Let go of your ego - admit you are not good
- Talk to people who have done it
- Learn the process of mastering the skill
- Practice!!!
- Accept that failure is how we learn
- Frustration and struggling are essential parts of learning

<https://www.scottheyoung.com/blog/2009/12/28/the-frustration-barrier-the-key-obstacle-to-being-good-at-anything/>

Learning as a Child

- Learning is the job of a child
- Why? Why? Why?
- We tried, we failed, we tried again, we failed again, we practiced until we were successful
- Did not have the inner critic to tell us we can't do it
- We had fun learning
- "There is no failure, just feedback"



<http://mindbodycoach.org/congratulations-youve-failed/>

Overcoming the Frustration

- Don't compare yourself to others
- Set small goals to see small incremental improvement
- Be realistic
- Focus on solutions rather than problems
- Stop asking why can't I do this, instead ask HOW can I do this?

Helping Others Learn

- Let the learner be frustrated and struggle
 - Make sure activities are challenging, but not impossible, but not so easy that learner is bored
- Remind them that learning is not easy
 - Nobody can do something perfectly the first time
- Make classroom safe and a place where failure is OK initially
 - Failure can be an option if it leads to learning and trying again

<http://www.teachhub.com/teaching-strategies-balance-between-challenge-and-frustration>

Lifelong Learning – How?

- Growth mindset (Carol Dweck) – work and practice will lead to improvement of self
- Change idea of learning – learning is all around you
- Establish goals – yearly and daily (tracker apps)
 - Learn something new every day – ask others
- Find a group of like-minded people
 - Book clubs, running groups, knitting circles, community band...

<https://www.artofmanliness.com/articles/how-and-why-to-become-a-lifelong-learner/>

Helping Students Become Lifelong Learners

- Define a problem and find and evaluate information
- Verify authenticity of information
- Brainstorm different solutions to a problem
- Think beyond the obvious
- Being able to present information clearly
- Listening and questioning skills to work in a team
- Developing an “I can” attitude
- Allow students to set own learning goals
- Setting and adhering to a time-line for project completion

<https://novanews19.wordpress.com/2014/10/26/developing-students-as-lifelong-learners-10-essential-skills/>

Practice Makes Perfect Permanent

- Organize goals – What do you want to learn?
Then set strategies to reach goals
 - Increased commitment with plan with clear objectives
 - Manage negative feelings better
 - See progress with learning
- Think about thinking (metacognition)
 - Ask questions about the process and progress
- Reflect on learning (cognitive quiet)
 - Get away from what you are doing
 - Reflect in a moment of calm

<https://hbr.org/2018/05/learning-is-a-learned-behavior-heres-how-to-get-better-at-it>

“Learning How to Learn”

- Dr. Barbara Oakley – Oakland University MI
- Coursera’s most popular course
- Neural reuse (Behav Brain Sci 2010 33:245)
 - Neural circuits formed for one purpose can be used for another
 - Use metaphor to explain complex ideas

Techniques to Help Learning

- 2 modes of thinking in brain
 - Focus = learners concentrate on material (task-positive networks)
 - Diffuse = resting state when new information settles in and where connections are made (default-mode networks)
- Bursts of focused work followed by short breaks

<https://www.nytimes.com/2017/08/04/education/edlife/learning-how-to-learn-barbara-oakley.html>

Techniques to Help Learning

- Take a break
- “Pomodoro Technique” – Francesco Cirillo
 - Set time for 25 minutes of intense, complete focused work – no distractions
 - Followed by brief reward that includes a break
 - Listening to music, take a walk... anything to relax and take mind of task
 - Brain subconsciously consolidates new knowledge
 - Also helps solve procrastination

Techniques to Help Learning

- Practice or “chunking”
 - Create a neural pattern that can be reactivated when needed
 - Chunks can build on chunks
 - Start with simpler tasks which can be built together into complex tasks
- Practice new information and connect it to prior knowledge

Active Learning > Passive Learning

- Use recall and test yourself frequently
- Spread out learning a little every day
- Mix it up – don't always start in the same place
- Go over errors to understand what went wrong
- Practice explaining to a 10-year-old
- Spend more time on the hard stuff
- Picture where you will be when you have learned concept/skill

<http://www.math.toronto.edu/nhoell/10rules-of-studying.pdf>

Get Some Sleep!

- Brain toxins created from all the neural work are removed
- Strengthens neural connections: Ultimate diffuse mode activity
- Time for brain to work on complex, difficult problems
- Review or think about what you want to learn right before you go to sleep

Get Some Exercise!

- Exercise produces neurons
 - More neurons = more neural connections = more learning
- Excellent diffuse mode learning activity
 - Brain can wander into a creative mode where learned content during focused mode is strengthened

<https://www.scribd.com/document/239485297/Learning-How-to-Learn-Teacher-Guide-pdf#download>

Spark Learning

- Encourage curiosity
- Take risks
- Reflect on what has been learned

"Anyone who stops learning is old, whether at twenty or eighty. Anyone who keeps learning stays young" – Henry Ford

What Did you Learn Today?

- Many benefits to lifelong learning
 - Increased happiness and confidence
 - More friends and more myelination
 - Less likely to experience dementia
- Learning more helps you learn more
- Learned how to learn again
- Learning works best when focused for a short time followed by breaks

What Will I Do to be a Lifelong Learner?

- What do I want to learn?
 - Musical instrument
 - Craft
 - Hematology
- How am I going to do it?
 - Lessons
 - Join club
 - Give presentation at national meeting

Get Reading...

- The Great American Read
 - https://bento.cdn.pbs.org/hostedbento-prod/filer_public/gar-phase-2/assets/TGAR_BookChecklist_2018.pdf
- 100 Books to Dive into this Summer/56 Books for Winter
 - <https://ideas.ted.com/101-books-to-dive-into-this-summer-a-reading-list/>
 - <https://ideas.ted.com/your-holiday-reading-recommendations-from-ted-speakers-56-books-you-wont-be-able-to-put-down/>
- The Reading List
 - <https://www.rusaupdate.org/awards/the-reading-list/>

Thank you!