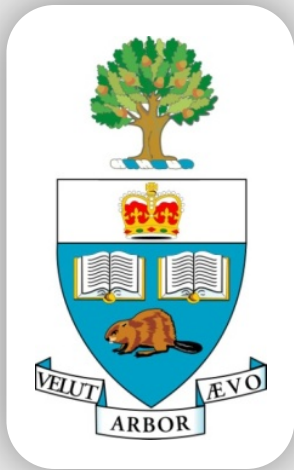


What I Wish I Knew When I Was in Grad School



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Graduate Skills Seminar, January 2012

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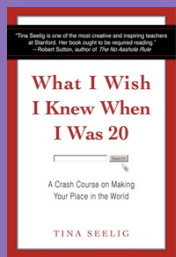
<http://www.cs.toronto.edu/~yganjali>



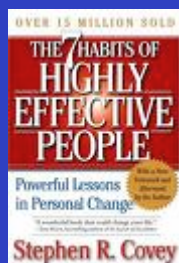
Graduate Skills Seminar

- Today: What I Wish I Knew ...
- Later:
 - How to do research?
 - How to give quality presentations?
 - How to write a research paper?
 - Internships and funding
 - Research ethics
 - Research in academia vs. industry
 - Graduate student panel

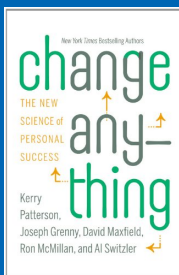
Ideas from ...



- What I Wish I Knew When I Was 20
- Tina Seelig



- The 7 Habits of Highly Effective People
- Stephen R. Covey



- Change Anything: The New Science of Personal Success
- K. Patterson, ...

Graduate School

- Not like undergrad.
 - You can't succeed just by doing what you are told.
 - *Your* road to success not predefined.
 - Yes! You have your own road!
- **You are responsible for your own success!**
- What about your “advisor”?
 - Think of her/him as a mentor.

Be Proactive

- Figure out what you need to do.
 - And, do it!
- You need to proactively ...
 - Do research
 - Find problems, find solutions, etc. (make systems, experiment, ...)
 - Communicate
 - Write papers, give talks, network, ...
 - Manage your relationships
 - Colleagues, advisor, ...
- Stretch the boundaries of your current skills
 - Take risks every now and then.

Stay Motivated

- Look for motivation inside.
 - Don't wait to be pushed by others.
 - Don't wait for someone else's permission to do what you want.

- Proactively work on keeping yourself motivated.
 - Spend time reading books that inspire you.
 - Talk to people who inspire you.
 - ...



Remember Your Goals

- Envision your graduation.
 - What is next? Are you excited about it?
 - Make sure you are!
- Identify what you want, and why.
 - Gives you motivation.
 - Clarifies values.
 - Gives you direction.

Prioritize

- You have many many options.
 - Which is very good.

- You need to choose what to focus on.
 - Many distractions along the way.

- Making decisions can be difficult.
- Choose! Don't let the external forces choose for you.
 - Choosing proactively can be extremely empowering.
 - And you get better at it over time.

Problems



- I see ... problems in your future!
 - Research ups and downs
 - Conflicts (with your friends, advisor, ...)
 - Procrastination
 - ...
- Embrace problems; don't avoid them.
 - Opportunities lie within problems.
- *"The bigger the problem, the bigger the opportunity. Nobody will pay you to solve a non-problem."*
 - Vinod Khosla, Co-founder of Sun Microsystems

Creativity: Wealth of Possibility

- **First requirement:** the attitude that the problem can be solved (proactivity).
 - No complaining here.
- The more problems you solve, the better you get.
- Unfortunately, there is no “algorithm” for solving problems.

- **Creativity is the key.**

- Example: What would you do to earn the most amount of money if you had
 - Two hours; and
 - Five dollars?
- How about buying a lottery ticket?! 😊

Solutions from Stanford Students

- Restaurant reservation
 - Saturday night, long lines at popular restaurants
 - Make reservations beforehand, and sell
- Measure bicycle tire pressure
 - For *free*; if needed add air for *one dollar*
 - Halfway: ask for donation instead of specific amounts
- And the winner is ...
 - Sell in class presentation time to companies who wanted to recruit students
 - Made \$650!
- None of them needed the \$5!

Failures

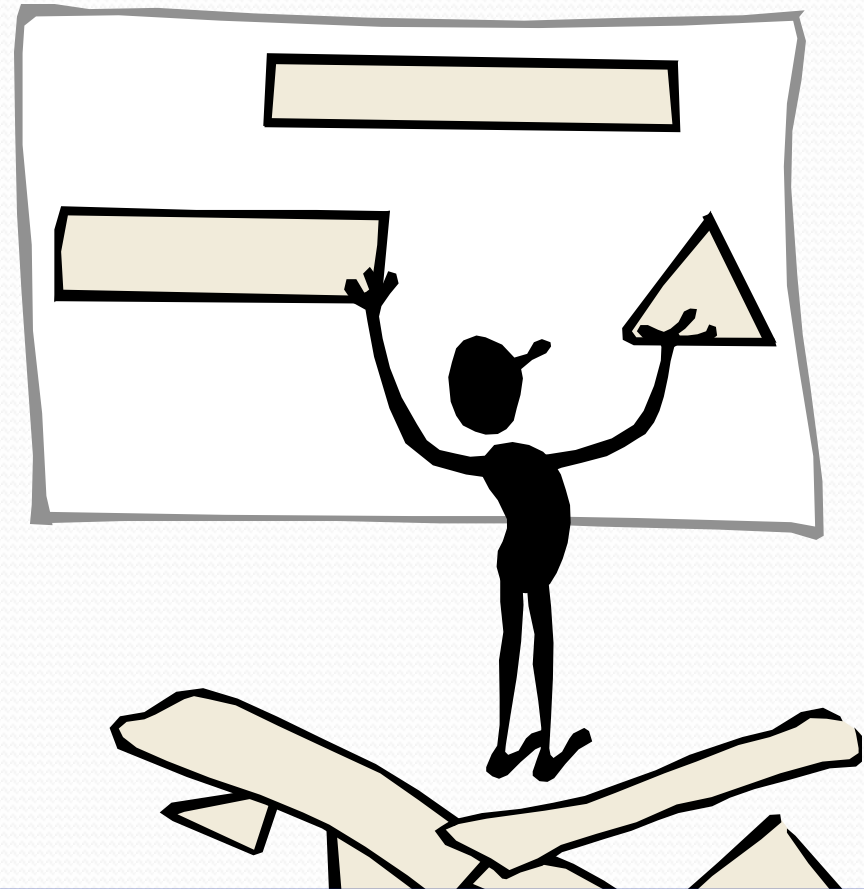
- Acknowledge failure as a natural part of the process.
 - It's inevitable; and
 - Necessary.
- Success comes from trying different things.
 - Pushing the limits
- For your thesis pick a topic which has 20% success chance. – Jim Plummer, Dean of Stanford's School of Engineering
- Think of failures as learning opportunities
 - If you aren't failing, you aren't taking enough risks.
 - You fail only if you don't learn from it.
- You don't have to try everything yourself though.
 - Learn from others' experience

Changing Direction

- Change is OK
 - Your methodology, thesis topic, your area, ...
- In fact, adjusting to conditions is essential for success.
 - You can't predict everything beforehand.
 - Need constant reassessment and adjustment.
- Most of the time small direction changes are enough to put you back on the right track.
- Sometimes major decisions are needed
 - Be honest with yourself; listen to your gut.
 - Consider alternatives.
 - Make the best decision you can, and regardless of the outcome feel good about it.

Change?

- In the past, people inherited their wealth and success.
 - No need for change.
- Today, people succeed on their own.
 - Change is essential.
- **Question 1:** Can we change?
- **Question 2:** If so, how?



“The biggest ally of super-achievers is the inertia of others.” – David Rathkopf

The Willpower Trap



- The marshmallow experiment
 - Kids who can resist eating a marshmallow for 15 minutes, do better in *almost every area of life*.
- Willpower defines your success
 - Is this true?
 - No! This is wrong! Tragically wrong!
 - Means no way to improve and change for better.
- Second marshmallow experiment: Simple distraction techniques improve success rate by 50%.
- Lesson: Personal skills are just as important!

The Bankruptcy Experiment



- Our primary problem isn't that we are weak.
 - It's that we are blind to what impacts us; and
 - We are outnumbered.
- **Bankruptcy Experiment:** Influence fifth graders to *spend or save* money
 - Each kid to complete 4 simple tasks; earn \$10 for each
 - Offered opportunities along the way to spend
 - Asked to think about what they would like to do with the money when they go home
 - All kids seemed motivated to keep the money and resist the temptations

The Bankruptcy Experiment – Cont'd

- **Task 1:** rank assorted candies from least to most favorite
- **Task 2:** alphabetize toys
- After each task everybody got a chance to look at the gift store
 - Countertop covered with inexpensive candies and toys
 - With outrageous prices: ten times the regular price
- Outcome?
 - Group 1: less than \$13 left; some with no money
 - Group 2: an average of \$34.
- Kid's didn't realize why this happened.
 - They blamed themselves. Lack of willpower!

How To Change Anything

- Six sources of influence
 - Personal, social, and structural
 - Motivation, and ability
- Forces that can work against us, work in parallel.
- We need to understand and use the same sources to change.
 - Success rate 10 times higher

	Motivation	Ability
Personal	1	2
Social	3	4
Structural	5	6

Sources of Influence

	Motivation	Ability
Personal	1	2
Social	3	4
Structural	5	6

- Source 1: Personal Motivation
 - Group 1: asked to taste their top ranking candy
 - Group 2: asked to think about what they wanted to buy
- Lesson: Interrupt your impulses by connecting with your goals during crucial moments
- Source 2: Personal Ability
 - Group 1: -
 - Group 2: taught to keep track of spending
- Lesson: Learn new skills

Sources of Influence

	Motivation	Ability
Personal	1	2
Social	3	4
Structural	5	6

- Source 3: Social Motivation
 - Group 1: three big spenders joined the team
 - Group 2: two spenders and one saver joined the team
- Lesson: Turn “accomplices” into friends

- Source 4: Social Ability
 - Group 1: -
 - Group 2: saver reminded others about the high prices
- Lesson: Ask for help and support; get a coach (e.g. your advisor?)

Sources of Influence

	Motivation	Ability
Personal	1	2
Social	3	4
Structural	5	6

- Source 5: Structural Motivation
 - Group 1: received credit
 - Group 2: paid in cash
- Lesson: Directly link short-term rewards to your new habit.

- Source 6: Structural Ability
 - Group 1: room surrounded by pictures of candy
 - Group 2: -
- Lesson: Make small changes to your environment; visual cues (e.g. desktop background), ...

The End ...

- **Question:** When do you know you have done enough work for your thesis?

The End – When You've Done Enough

- Don't be a perfectionist.
 - Your PhD thesis is only one project out of many you will complete in your life.
- Strong sign: when you have published two *good papers*
 - High impact, published in highly reputable conferences or journals
- Of course, this rule depends on your area.
- Talk to your advisor about it. He/she would be able to help.



Thank you!

Any thoughts/suggestion for future topics?