How to be an ultralearner

Overview

This article summarizes the book *Ultralearning* by Scott Young. Young completed the MIT Computer Science curriculum, four years' worth of education in one year. In his book, Young describes ultralearning as a set of learning strategies enabling anyone to learn any topic, regardless of their background. There are 9 principles that are used in ultralearning,

1) **Principle 1- Meta-learning**: Using strategies to answer how, what, and why you're learning.
2) **Principle 2 – Focus**: Figuring out the most optimal ways to stay focused on your learning task.
3) **Principle 3 – Directness:** Designing practice that is directly related to your learning.
4) **Principle 4 – Drill:** Tailoring drills to maximize your learning.
5) **Principle 5 – Retrieval:** Actively retrieving knowledge that you learned.
6) **Principle 6 – Feedback:** Using feedback to enhance your learning.
7) **Principle 7 – Retention:** Creating systems to maximize retention of concepts.
8) **Principle 8 – Intuition:** Building intuition by breaking concepts down to their first principles.
9) **Principle 9 – Experimentation:** Learning through different types of experimentation.

Background

I will capture these 9 ultralearning principles through an example that Young concludes the his book with.

Even before having kids, Laslow Polgar was convinced that he could raise his kids to be geniuses. He had read volumes of literature on learning and intelligence and concluded that, given the right conditions, anyone could master any skill. Armed with this ambition, he and his wife Klara set out to raise their children to be world class chess players. Their three daughters, Zsofia (Sophia), Zsuzsa (Susan), and Judit, became International and Grandmasters in chess, respectively, with Judit becoming one of the most celebrated chess players in history. Their story is frequently used in case studies by experts in learning science. The principles of ultralearning can be seen in their story.

Principle 1: Meta-learning

Before embarking on his quest, Laslow created one of the largest private chess databases in history as well as putting together a coaching plan.

Principle 2: Focus

Laslow would work on his daughters' focus by building them up to 24-hour chess marathons.

Principle 3: Directness

Laslow would take his daughters to games with men, as chess was a male-dominated game. He simulated the environment that the girls would be in.

Principle 4: Drills

The Polgar sisters would participate in games of rapid chess and blindfolded chess. Laslow would vary the types of drills that the sisters did to maximize their learning.

Principle 5: Retrieval

Instead of having his daughters pre-memorize problems, Laslow asked questions to push his daughters to actively retrieve the information.

Principle 6: Feedback

Laslow would place his girls in matches mostly in matches where their opponents were close to their skill level. This allowed the girls to get a sense of how they were progressing relative to their peers.

Principle 7: Retention

Laslow would have his daughters recall chess patterns on a spaced schedule. This would lessen the likelihood of forgetting.

Principle 8: Intuition

Laslow would encourage his girls to write articles about chess in order to develop their knowledge of chess. Writing forced them to think slowly and deeply about the topic.

Principle 9: Experimentation

As their skills levels increased, each of the three girls had to experiment with different styles of their game that would work best for each of them.