Secondary Research

# Neruoplasticity

* Neuroplasticity is constantly happening, and your brain adapts every day
* This said, different states happen more at different phases of life. For example, brains work towards sensory information and other processing types. This is known as developmental plasticity and learning / memory plasticity.
* Later in life, especially to compensate for loss of functions or brain damage, the brain begins to adapt to be able to maximize the remaining functions (or sharpen working senses to be more useful)
* It’s important to note that the brain is shaped based on the person’s environment and actions, and therefore your environment/actions could strongly increase or reduce your ability to become proficient at something or your brain’s plasticity / adaptation to something.

Dr. Norman Doige’s “A Brain that changes itself”

* Our brains have REMARKABLE power to grow / change / adapt / learn / recover – even overcome disabilities!
* After being pushed to think differently / process info differently, the brain can adapt to do something independently, even if it wasn’t initially able to (a woman was able to regain her sense of balance after wearing a device that helped her brain interpret messages).
* This adaptation has many implications; it means brains can adapt to do more than they were initially able to / can be trained to become extremely proficient at something!
* This said, to be able to permanently change your brain mapping, two conditions must be met, both of which can be brought about through enthusiasm for whatever you’re training your brain in:

1. Doing it constantly - just like a muscle, the brain can get worn out, and therefore must be worked constantly to “stay in shape”
2. Multi-tasking and divided attentions won’t actually progress your brain map towards anything lasting – at most, the changes are temporary.

* This function can even be used to “Cure” disabilities, as through intensive and constant training, your brain can conquer many disabilities – even as far as working with one half of a brain and being successful, or progressing with even spinal damage – typically paralyzing.
* Similar strategies can be used for even emotional gain
* This reality of plasticity can be used for further treatment, recovery, and even brain development – overall super cool!

# Battleship

<http://en.battleship-game.org/>

* Very simple, no real images outside dots for misses, squares for hits
* Ships are not allowed to be touching
* Multiple hits after each consecutive hit
* Click and drag ships
* Different ship layout

This version was extremely simple, with boxes for the ships (different sizes). The restriction that I found in this game was ships cannot touch, although I don’t think that’s a good idea to include in my game as that’s not how the real battleship is played. The feature that I liked about this game was you could click and drag to move ships, although I’m unsure if I could incorporate that into my game.

<http://www.battleshiponline.org/>

* Sounds!
* Name entry
* Good instructions
* Keyboard input
* Somewhat buggy
* Splash effects on hit
* Popup on successful hits + text
* Cool UI
* Rotate by arrow keys

This battleship looked the best of all three, with a three dimensional feel to it. This said, placing of the ships was a buggy experience since it didn’t end up placing all my ships where I wanted. Two features I really want to incorporate from this game into my actual one are the sounds and the well-designed UI. The game also had name entry, a feature I will definitely incorporate.

<http://www.knowledgeadventure.com/games/battleship/>

* Rotate button on the physical ship, not the side
* Better “miss” tracking
* Sound effects!
* Moving gifs
* Didn’t tell you what you hit.

One feature I noticed after playing all three games is that only the second displayed which ship you actually hit – a feature I feel is necessary to include so that users can plan/fire accordingly (it also states that users are supposed to in the real game). The one thing that really stood out to me in this game was moving gifs. If that’s possible in java (which I can’t reason why there’d be a problem), it’d make for a pretty cool background to the battlefields (with blank buttons and waves under)! The sound effects in this game also seemed to work well, and it’s definitely something I want in my game.

Sources used for neuroplasticity research:

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The actual PDF for his book, <http://www.stellarpoint.com.au/wp-content/uploads/2013/01/The-Brain-That-Changes-Itself.pdf>

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