

The Role of Neuroplasticity in Learning Music

Neuroplasticity is the brain's ability to change and adapt due to experience. It is an umbrella term referring to the brain's ability to change, reorganize, or grow neural networks. This can involve functional changes due to brain damage or structural changes due to learning. There are two main types of neuroplasticity. Functional plasticity is the brain's ability to move functions from a damaged area of the brain to other undamaged areas while structural plasticity is the brain's ability to actually change its physical structure as a result of learning. Our brains can develop and absorb new knowledge quickly when we are children, but the brain becomes less 'elastic' as we age. By exercising our brain, and learning a new skill such as playing an instrument we can promote neuroplasticity. Moreover, learning an instrument can increase the activation of the regions in the brain involved with auditory and visual processing and motor responses.

The first aspect that comes to my mind when I think about playing music is sound. The sound that an instrument emits is processed by our ears and then through our brain, through the temporal lobes which deal directly with hearing, language, and memory. The main function of the temporal lobes is interpreting auditory stimuli, in this case, music. The auditory cortex is a section of the temporal lobes that is responsible for this interpretation and translation of sound. Since learning an instrument requires repetition of play (which emits sounds) and even sampling of existing music, there will be constant encountering of sound and audio through the entire process of playing the instrument. Learning and playing an instrument can change the structure of the auditory cortex and the surrounding areas of the temporal lobes. Over time, this change and restructuring could even change our disposition to the music we play, making certain songs and instruments more or less appealing to hear based on the number of times the auditory stimuli has been processed.

