**Problem to Be Solved:** For native English Speakers, it is a challenge to learn Mandarin Chinese because it is a *tonal* language. This study aims to integrate theoretical insights on L2 and L1 acquisition of Mandarin Chinese tones into concrete instructional materials for English speakers. These materials can be also implemented as a tone production game designed to facilitate tone learning by scaffolding the hierarchy of difficulty. In so doing, this study constructs an innovative approach to designing tone learning sequences and a training tool, which can be ultimately transformed into the level design for an app game for tone learning.

**Theoretical Background:** The sequencing of tone learning model takes into consideration the following three aspects: (i) different difficulties for L2 speakers’ acquisition of Mandarin tones in production and perception; (ii) orders of phonological acquisition by Chinese speakers, including sequential acquisition of tones, consonants, and vowels; (iii) lexical frequencies in several spoken Chinese corpora. As such, this research is a pioneering attempt to integrate insights from studies on L2 and L1 acquisition of Mandarin tones into a novel approach to a game-mediated Chinese tone L2 acquisition. The outcomes of this study will contribute to the ongoing discourse on the relationship between L1 acquisition and a L2 learning model, as well as on the effect of game-mediated learning, while further illuminating the extent to which human language capacity and principles of L1 acquisition play a role in L2 acquisition.

**Design of the Tone Learning Model:** The proposed model maps out the modules of learning based on a hierarchy of tone difficulty for English-speaking learners of Chinese and translates them into learning and game environment. This hierarchy contains approximately 400 sounds in Mandarin in all four tones. Approximately 1,300 sounds (excluding non-words from 1,600 possible sounds) are divided into 10 levels of difficulty. All tokens are carried in a monosyllabic CV template.

**A Preliminary Study of the Reliability of the Experiment Instrument (scheduled to be conducted in April 2016):** The main goal of this preliminary study is to test the reliability of the hierarchy of difficulty in light of the empirical data to be gained from true novice Mandarin learners of native English speakers who will be exposed to Mandarin sounds for the first time in the experimental setting. The experiment itself, comprised of tone perception and production tasks in ten levels, will be carried out as a unique gaming experience for participants. For the tone perception task, participants will play a modified version of Picky Birds, a tone learning app game developed by the PI with her undergraduate game developers at MSU as a part of her grant-supported research project, Tone Perception Efficacy Study (March-May 2015). For the tone production task, participants will interact with a character in the app game and mimic the sounds it prompts.

**Implications:** The study provides a model for L2 Mandarin tone learning in a self-paced gamified environment. It also serves to bridge previous theoretical L2 learning models such as Perceptual Assimilation Model and Speech Learning Model, thereby illuminating the connections between L1 and L2 acquisition of Mandarin tones. In conjunction with this experiment, we are currently working on the beta version of the digital tone analysis tool, which can be embedded in a tone production app game. This larger project, when completed, can potentially transform how English speakers learn not only Mandarin tones but also other languages via app games, which motivates and engages players to become self-directed learners.