1-1-2019

An Understanding of the Artistic Sight of Musicians

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Project Title: An Understanding of the Artistic Sight of Musicians

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Proposal Identifier: RCEU19-MU-KMN

Project Description: Currently, there is very limited research that documents how musicians read or study music differently based on their specific instrument training using a qualitative and quantitative analysis. This goal of this research project is to serve as a pioneering study and contribute new knowledge to the piano pedagogy and music education fields by investigating how musicians read music differently based on their own instrumental training. In this research, we will compare the data collected from professional musicians and collegiate student musicians reading music on the piano versus their own instrumental music notation. The data will be collected at Roberts Hall with the EEG headsets, Gazepoint eye-tracking analysis software and hardware already available in CAHS. The objectives of this study are to (i) identify the differences in music reading with musicians of different instrument training, and (ii) understand how musicians read music differently when playing on their primary instrument and non-primary instrument. I am currently working on obtaining an IRB for this project. With the data collected from both observations, the EEG and eye-tracking software, we propose that musicians with piano training as primary background will read music fluently utilizing intervallic reading, multi-key approach, and note-recognition, whereas musicians with non-piano training as primary education will play music at sight relying on intervallic reading. The understanding of the differences between musicians with or without piano as primary instrument training is critical as it can increase efficiency in teaching students of all instruments with the increased knowledge of how they read music organically with regard to their primary music training. Individualized instruction in music is essential, but the understanding of how we shall tailor the instruction on reading music is even more essential to ensure that the musicians' abilities are efficiently brought to their fullest.

Student Duties: Students will be asked to assist with conducting the weekly sight-reading research sessions with musicians, analyze data collected from each research sessions, survey relevant literature, interview EEG and Eye-tracking faculty experts at least 3 times, write technical reports for each research session, transpose music for specific notation according to the

musicians' primary instruments before the research session begins, prepare the research session with music instrument and recording setup weekly.
Students will be able to obtain: (i) practical skills and knowledge on utilizing EGG and Gazepoint eye-tracking devices and software fluently, (ii) deeper understanding of music notation and transposition, (iii) hands-on knowledge to conduct music research sessions, (iv) improvement on literature surveying skills, (v) knowledge to analyze scientific data, (vi) skillsets to observe and collect qualitative data, (vi) perform oral and written research reports.

Faculty Requirements and Mentorship: Student should have already taken Piano Pedagogy I or relative Music Education course, and must have already taken one of the introductory 100-level courses in COS/COE. Prior research experience and music training are preferred. Weekly meetings will be held either on UAH campus or via online zoom conferencing, which facilitates supervision and interaction with professional musicians and EGG/eye-tracking research experts who reside outside of Huntsville. The first 2 weeks will be hands-on training to facilitate and build new skillsets on recruiting, conducting research and literature review, alongside preparing the notation transcription for all instrumental adaptations among other music session set-up. In week 3 – 5, student will be assisting to conduct the sight-reading research sessions with professional musicians and collegiate students using the EGG and eye-tracking devices, collect and sort the data and observations, compose technical reports for each research session completed. In Week 6-9, students will be analyzing the collected data, generate data reports, compare research sessions, interview with field experts, assist in identifying the variations of sight-reading abilities of research participants. In Week 10, student will give oral and written reports on the research sessions.

Prior Awardees: <u>(i) 2017 - Multi-Cultural Piano Duet Repertoire Collection</u>
Tangible Contribution: A new collection of piano duets is created, featuring 9 different countries that encourage conversations and exchange between two piano players about culture and artistic value. This collection has since been used for intermediate piano students.
Specific Outcomes: Gain the knowledge to create solo piano compositions. Improve the ability to create piano duet arrangements based on performance analysis. Gain the knowledge to use MuseScore (music notation software) fluently for piano 2-hand & 4-hand notations.
<u>(ii) 2018 - Musical Inclusion & Diversity through Choral & Piano Arrangements</u>
Tangible Contribution: A new collection of choral & piano arrangements are created for children's choir, featuring 10 diverse musical arrangements of music from underrepresented

cultures and non-western folk tunes, which fills the gap in repertoire that is mainly filled with popular western music.

Specific Outcomes: Gain the knowledge to create choral arrangements for children's choir. Improve the ability on aural analysis on vocal music. Gain the ability to transcribe music aurally and translate to musical notations. Gain the knowledge to use MuseScore for SATB 4-part choral arrangements, and Choral & Piano arrangements.