



DECEMBER 2018

MANITOBA MUSIC EDUCATORS' ASSOCIATION
L'ASSOCIATION MANITOBAINE DES ÉDUCATEURS DE MUSIQUE

PRESIDENTS' MESSAGE VIRGINIA HELMER

Hello all,

In my first message as the new president of MMEA, I would like to thank all of those who have laid the foundation for this unique and vital organization. As Eric Marshall finishes his time on the board, completing his term as Past President, and Karen Tole-Henderson moves into the role of Past President, I know I will be relying on their strong leadership and advice to navigate the challenges of my new position.

At our recent MMEA Board meeting, the following slate of officers was affirmed for 2018-2019:

Past President – Karen Tole-Henderson
President – Virginia Helmer
Vice President – Les Chalmers
Secretary- Jennifer Shead
Treasurer – Tyler Yip
Members at Large – Leanne Jensen, Tyler Yip

As well as the Board, the following Portfolio Positions have been affirmed for 2018-2019:

Music Month – Leanne Jensen and Pauline Courcelles-Chabot
Newsletter – Meaghan Walker
Membership Secretary – Danessa Poiron
Conference Chairperson – Judy Giesbrecht
Archives – Francine Morin
AMAM Liason – Tyler Yip
SAGE representative – Danessa Poiron
Web Master- Vic Hooper
Bookkeeper – Dale Weevers
Arts Steering Committee Representative – Ginny Helmer
CNAL Symposium Steering Committee – Karen Tole- Henderson
Communications Chair – Eric Marshall
French Language Representative – Pauline Courcelles-Chabot

Our Tempo conference this year was another resounding success thanks to the leadership of Judy Giesbrecht and her team. Thanks to all of you for your hard work and dedication. I know you are already planning for next year! I'm sure we are all looking forward to it, in addition to the many amazing PD opportunities offered by our partner organizations throughout the year.

Best wishes to all for a happy and joyful holiday season,

Virginia Helmer
President,
Manitoba Music Educators' Association

Calendar of Events and Activities

MBA events - <http://www.mbband.org/?page=calendar>

MOC events – www.manitobaorff.org

MCGA events - <http://www.manitobaguitar.ca>

MCA events - <http://www.manitobasings.org>

Concerts and Other events – check each events website for updated information.

Date	Event	Location	Sponsor
2018/2019			
December 16	Christmas Tuba Festival		MBA
January 17	Solo and Ensemble Festival		MBA
January 18	Orffantastique avec Guylaine Myer		MOC
January 19	Da Capo Conference		Brandon Univ.
January 25	Classroom Guitar Professional Development		MCGA
January 25	Wind Band Teaching Workshop with Craig Kirchhoff		U of M
February 1	Beginning Jazz 101 Workshop with Bill Kristjanson		
February 1-3	Manitoba Provincial Honour Choir		MCA
February 8-9	WestMan Region Honour Band		MBA
February 9	Winter Workshop with Aimee Pfitzner		MOC
February 19-22	MBA Concert Band Festival		MBA
February 27 – March 2	MBA Jazz Band Festival		MBA
March 1	Kodaly Society of Canada Workshop		U of M
March 14-16	Brandon Jazz Festival		
March 16	Community Band Festival (Roland MB)		MBA
March 21	Central Region Honour Band		MBA
April 24-25	Level One Band Festival (Brandon)		MBA
April 26	Children's Day (Brandon)		MOC
April 30	Children's Day (Winnipeg)		MOC
April 30-May 3	Level One Band Festival (Winnipeg)		MBA
May 1	Children's Day – French (Winnipeg)		MOC
May 5-12	Canadian Band Association – National Youth Band in Manitoba		MBA
May 6	Music Monday		

May 7-11	National Youth Band of Canada in Manitoba	MBA
May 9-11	Manitoba Jr and Int. Honour Band	MBA
June 1-2	Community Band Festival (The Forks)	MBA
June 3	Creative Music Festival	MCGA
July 2-12	Orff-Schulwerk levels 1 & 2	MOC/U of M
July 3-6	Canadian Conference of Music Teachers' Association – Winnipeg	MRMTA
July 15-26	Kodály Level 1	U of M

Please contact the sponsoring organization directly to confirm event times, locations and registration information.

Research & Advocacy

The relationship between music and literacy is a strong one. But rather than think of one activity serving the needs of another, recent research suggests that these two areas are so closely connected neurologically that they use the same neural pathways. This article specifically discusses the link between a sense of rhythmic pulse and the ability to decode written language. By improving beat competence, students become more adept at reading. In our current educational climate, this is an advocacy piece with teeth!

ANNALS OF THE NEW YORK ACADEMY OF SCIENCES

Special Issue: *The Neurosciences and Music VI*

ORIGINAL ARTICLE

Clapping in time parallels literacy and calls upon overlapping neural mechanisms in early readersSilvia Bonacina,^{1,2} Jennifer Krizman,^{1,2} Travis White-Schwoch,^{1,2} and Nina Kraus^{1,2,3,4,5}¹Auditory Neuroscience Laboratory, Northwestern University, Evanston, Illinois. ²Department of Communication Sciences, Northwestern University, Evanston, Illinois. ³Institute for Neuroscience, Evanston, Illinois. ⁴Department of Neurobiology, Northwestern University, Evanston, Illinois. ⁵Department of Otolaryngology, Northwestern University, Evanston, Illinois

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The auditory system is extremely precise in processing the temporal information of perceptual events and using these cues to coordinate action. Synchronizing movement to a steady beat relies on this bidirectional connection between sensory and motor systems, and activates many of the auditory and cognitive processes used when reading. Here, we use Interactive Metronome, a clinical intervention technology requiring an individual to clap her hands in time with a steady beat, to investigate whether the links between literacy and synchronization skills, previously established in older children, are also evident in children who are learning to read. We tested 64 typically developing children (ages 5–7 years) on their synchronization abilities, neurophysiological responses to speech in noise, and literacy skills. We found that children who have lower variability in synchronizing have higher phase consistency, higher stability, and more accurate envelope encoding—all neurophysiological response components linked to language skills. Moreover, performing the same task with visual feedback reveals links with literacy skills, notably processing speed, phonological processing, word reading, spelling, morphology, and syntax. These results suggest that rhythm skills and literacy call on overlapping neural mechanisms, supporting the idea that rhythm training may boost literacy in part by engaging sensory-motor systems.

Keywords: synchronization; rhythm; frequency-following response; reading; auditory processing

Introduction

Musical training, especially training that focuses on cross-modal integration among visual, auditory, and motor systems, benefits literacy-related language skills, presumably because it enhances the dynamic connection between these different brain areas important for literacy.¹ Indeed, the interaction between sensory and motor systems when synchronizing to an external isochronous (i.e., steady) rhythm has been proposed as the reason why music training can benefit literacy.^{2,3} This link between synchronization ability and language/reading skills is well established in both typical and atypical populations.^{4–9} However, the mechanisms underlying this link need to be further explored to disentangle the role that different systems involved in rhythm tasks play in shaping specific aspects of auditory processing and literacy.

Synchronizing a movement to a steady beat requires a repeated and stable interaction between the auditory and motor systems with an undoubtedly strong demand of the fine temporal resolution of the auditory system. The frequency-following response (FFR), a predominantly subcortical evoked response to a complex sound, such as speech, that indexes the microsecond precision of auditory processing,^{10,11} has been used to study the link between motor and auditory systems. Several parameters can be extracted from the FFR: stability of the brainstem's representation of sound from trial to trial; phase consistency of the neural firing to a specific frequency range of the stimulus; and envelope accuracy, the fidelity of the brainstem response to the envelope of the stimulus. The stability and phase-consistency of the FFR have been found to relate with beat-tapping performance in typically

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developing adolescents¹² and preschoolers.¹³ It was also found that the envelope accuracy of the FFR combined with beat-synchronization ability could predict reading readiness¹⁴ in typically developing preschoolers.

The aforementioned studies explored how difficulties in synchronizing a movement to a beat are mirrored in language/reading skills and in neural processing of sound in both quiet and noisy backgrounds. Hearing sounds in noise is a very common situation, inside and outside learning contexts; it requires huge involvement of sensory processing and integration.^{15,16} Therefore, considering this scenario—that is, exploring auditory neural processing with noise-masked speech—seems particularly compelling, especially with respect to synchronization ability.

Yet, assessing beat synchronization skills in a rigorous way is a challenging task, which requires precise systems that are able to capture minimal discrepancies between the auditory pacing stimulus and the actual performance. While researchers have come up with a range of settings to tackle these issues, such as developing their own experimental set ups with drums or keyboards, cables and specific recording software (e.g., in Refs. 17 and 18), a seemingly unexplored alternative is provided by Interactive Metronome (IM), a portable clinical assessment and training tool that measures synchronization ability in an automatic and convenient way through a clapping-in-time paradigm. In addition, the IM technology offers the functionality of providing online feedback during the clapping-in-time performance, and it is actually this distinct aspect that has made IM so appealing from both therapeutic and theoretical perspectives.

IM has been investigated largely from a clinical perspective to prove its therapeutic impact on cognitive and motor skills in various populations.^{19–21} However, recently, it was also considered from a neuroscience point of view and it revealed its link with cortical speech processing and language skills in typically developed adolescents, especially when visual feedback was provided to help in synchronizing.²²

The current study aims at deepening the understanding of the biological correlates underlying clapping in time. In particular, by studying typically developing school age children in their initial stage of learning how to read and directly comparing two rhythm tasks, our work adds to previ-

ous studies showing links between rhythm and language skills in older children using simple tapping tasks.

We hypothesized that the incorporation of feedback draws on phonological, cognitive, and auditory temporal skills engaging the sensory and motor systems important for reading while only some of them are actively engaged in the no feedback condition. Therefore, we expect that only when all of these systems are involved, clapping in time would be a reflection of reading ability.

Methods

Participants

Sixty-four children (31 females) aged 5–7 years old (mean = 6.244, SD = 0.61) were recruited from the greater-Chicago area. These children had no history of a neurologic condition, no diagnosis of autism spectrum disorder or learning disabilities, and no second language exposure. Children passed a screening of peripheral auditory function (normal otoscopy, tympanometry, and distortion product otoacoustic emissions at least 6 dB SPL above the noise floor from 0.5 to 4 kHz). Parents or legal guardians provided informed consent and assent was given by the child prior to participation. All study procedures were approved by Northwestern University's Institutional Review Board. Children were monetarily compensated for their participation.

All behavioral and neurophysiological tests were presented in a random order to participants over two to three sessions.

Beat synchronization

Beat synchronization was assessed using IM. IM assesses synchronization ability by having a child clap two hands together in a fluid circular motion against a hand trigger in time with a pacing tone delivered over headphones. Synchronization was performed under two different conditions: first without feedback (no feedback) and then with feedback (feedback). In the feedback condition, a visual indicator is shown on a computer screen, reflecting the asynchrony between their last clap and the “target” beat (ms before or behind the beat). In both conditions, synchronization was performed at a rate of 0.9 Hz for 1 min without any practice period. The goal of IM is to align one's clap with the pacing tone; thus, it is important that not only the clapping rate

of 0.9 Hz is maintained but that it happens in phase with the pacing tone (i.e., at 0° phase). The feedback facilitates clapping at the correct rate and phase.

Data processing

Synchronization variability during each condition was calculated as the standard deviation, in ms, of the asynchronies, which are automatically computed and reported by the IM software. We chose it as the main measure of performance on this task, in line with several studies investigating individual differences in synchronization ability.²³ The measure of asynchrony was chosen because it reflects deviations in both time and phase.

Neurophysiology

Stimulus

FFRs were elicited to a 170 ms [da] stimulus presented at 80 dB SPL and a 4.35 Hz presentation rate. The [da] was a six-formant stop consonant-vowel synthesized at 20 kHz in a Klatt-based synthesizer, with voicing onset at 5 ms, a 50 ms consonant-to-vowel transition, and a 120 ms steady-state vowel. The [da] stimulus was presented amid a background noise consisting of six talkers, four females, speaking English nonsense sentences.²⁴ The noise was presented as a continuous repeating masking track (45-s duration) and there was no phase synchrony between the onset of the [da] and the noise track. Stimulus presentation was controlled by E-Prime version 2.0 (Psychology Software Tools, Inc., Sharpsburg, PA). The goal was to collect 4000 artifact-free from each child, and so ~4200 stimulus trials were presented in about 20/25 minutes. For additional details, see Ref. 25.

Data collection

Children sat in a comfortable chair in an electrically shielded and sound-attenuated booth (IAC Acoustics, Bronx, NY) while watching a film of their choice to facilitate a relaxed state. The [da] was presented in alternating polarity monaurally to the right ear via electromagnetically shielded insert earphones (ER-3A, Etymotic Research, Elk Grove Village, IL). The left ear was unoccluded so that children could hear the movie soundtrack (<40 dB SPL in sound field). Responses were recorded differentially with a BioSemi Active2 system (BioSemi, Amsterdam, The Netherlands) with ActiABR module via LabView 2.0 (National Instruments, Austin, TX). A vertical recording montage was used with active at Cz, ref-

erences at each ear, and CMS/DRL equidistant from Fpz (1 cm on either side). Only ipsilateral responses were used in this analysis. Responses were digitized at 16.384 kHz with an online bandpass filter of 100–3000 Hz (20 dB/decade roll-off). Offset voltages for all electrodes were $< \pm 50$ mV.

Data processing

Responses were offline amplified in the frequency domain for 20 dB per decade for three decades below 100 Hz. Amplified responses were bandpass filtered from 70 to 2000 Hz (12 dB/octave roll-off, Butterworth filter, zero phaseshift). Responses were epoched from –40 to 210 ms and baseline-corrected relative to the prestimulus period (–40 to 0 ms). Responses exceeding ± 35 μ V were rejected as artifact. Averages containing 2000 sweeps of each stimulus polarity were created and combined in two ways. First, average responses to the two polarities were added (FFR_{ENV}) to emphasize the lower frequency components of the response, including the temporal envelope. Second, the average response to one polarity was inverted before adding to the other response polarity (FFR_{TFS}), to emphasize the higher frequency components by maximizing the spectral response.

Data analysis

Previous studies investigating the relationship between synchronization ability and the FFR have found that intertrial stability, intertrial phase-locking consistency, and accuracy of envelope encoding are linked to the ability to synchronize to an external beat. Therefore, the current analyses focused on these three FFR components. All data analyses were performed in MATLAB (2010) and SPSS (version 24).

Intertrial phase-locking consistency

Intertrial phase-locking consistency was assessed using a procedure previously reported.^{12,26} It was calculated on consecutive 40 ms Hanning-ramped windows (39 ms overlap), over the 60–170 ms portion of the response waveform. Only responses that fell below the artifact rejection criterion (i.e., ± 35 μ V) were included in the analyses. In each window, the spectrum was calculated using a fast Fourier transform. This resulted in a vector for each frequency that contained a length, indicating the encoding strength for each frequency, and a phase, which contained information about the timing of

the response to that frequency. To examine the timing consistency of the response, each vector was transformed into a unit vector (i.e., a vector with a length of one, discarding the information about encoding strength) and then averaged across sweeps so that the length of the resulting vector provided a measure of the intertrial phase consistency. Mean phase consistency values were computed at multiples of 100 ± 10 Hz, and across all time windows between 60 and 170 milliseconds. The 12 mean phase consistency values between 200 and 1200 Hz were averaged to form a global phase consistency measure. We report results on FFR_{TFS} .

Intertrial stability

Intertrial stability was assessed using a procedure previously reported.^{12,27} To calculate the stability of a participant's response to the speech stimulus, 2000 of 4000 trials were randomly selected and averaged. The remaining 2000 trials were also averaged. The two averaged waveforms were then correlated over 0–170 ms to determine their similarity. These steps were repeated 300 times, each with different random samplings of 2000 trials in each average, and the 300 correlation values were averaged to generate a final measure of intertrial neural response stability. Correlation values were Fisher transformed. We report results on FFR_{TFS} .

Speech-syllable envelope encoding accuracy

Envelope encoding accuracy was assessed on FFR_{ENV} using a procedure previously reported.¹⁴ To analyze the fidelity of neural encoding of the stimulus envelope, both the stimulus and response were band-pass filtered from 70 to 200 Hz and then a Hilbert transform was applied to extract the temporal envelope. To calculate the precision of envelope encoding, a cross-correlation was performed between the temporal envelope of the stimulus and response over the vowel (60–170 ms). The maximum correlation within a 5–12 ms lag window is reported (r , converted to Fisher's z for statistical purposes).

Cognitive, language, and reading skills

Verbal intelligence

Verbal IQ scores were estimated with the Wechsler Preschool and Primary Scale of Intelligence, third edition²⁸ and with the Wechsler Intelligence Scale for Children, fifth edition.²⁹ We administered the information subtest to assess verbal IQ.

Phonological memory

Phonological memory was measured with the Comprehensive Test of Phonological Processing.³⁰ It is a composite score of Memory for Digits, in which children repeat a series of numbers ranging in length from two to eight digits, and Nonword Repetition in which children repeat nonwords that range in length from 3 to 15 phonemes.

Phonological awareness

Phonological awareness was measured with CTOPP. It is a composite score of Elision, in which children create a new word by dropping a syllable or phoneme from a spoken word, Blending Words in which children blend spoken syllables to create a new word, and Sound Matching in which children select words with the same initial and final sounds.

Morphology and syntax

Morphology and syntax were assessed with the Word Structure subtest of the Clinical Evaluation of Language Fundamentals³¹ in which children were asked to complete an orally presented sentence that pertains to an illustration.

Basic reading

Basic reading is a cluster score measured by the Woodcock-Johnson III Test of Achievement³² and it is composed of the Letter-Word Identification and Word Attack subtests, which are intended to assess sight vocabulary, phonics, and structural analysis. In Letter-Word Identification, children read a list of words of increasing difficulty in isolation; in Word Attack, children pronounce nonsense words of increasing complexity.

Processing speed

Processing speed was assessed using the Visual Matching subtest of the Woodcock-Johnson III Test of Cognitive Abilities³² in which children were asked to locate and circle the two identical numbers in a row of six numbers. This task proceeded in difficulty from single-digit numbers to triple-digit numbers, with a 3-min time limit.

One child was not assessed on both phonological memory and awareness, another child on both basic reading and processing speed, and finally another child was not assessed on any of the behavioral tests. Those three children were excluded from the analyses using these measures. Standard scores were used for all cognitive, language, and reading tests.

Table 1. Summary statistics of all measures (frequency, mean, and standard deviation)

	N	Mean	SD
Feedback IM variability	64	13.09	3.15
No feedback IM variability	64	13.79	3.07
Phase-locking consistency	64	0.06	0.02
Neural stability	64	0.33	0.18
Envelope accuracy	64	0.61	0.23
Phonological memory	62	101.89	13.56
Phonological awareness	62	110.81	15.29
Basic reading	62	118.37	15.18
Morphology and syntax	63	11.57	2.878
Processing speed	62	105.10	15.62

Statistical analyses

Pearson correlations between variables were run to explore the relationships between IM synchronization variability and both neural and behavioral measures. Two independent linear regressions were performed to investigate the unique contribution of FFR measures and literacy measures to synchronization variability under no feedback and feedback conditions, using variability of asynchronies in each condition as the dependent variable. Prior to running the regressions, a factor analysis was run on the FFR and literacy independent variables. It was found that the FFR measures factored onto one variable, while the literacy measures factored onto a separate variable. These factors were used when running the regressions. In addition to the FFR and literacy factors, sex and verbal IQ were included as predictors to partial out their influence. Table 1 reports summary statistics (mean and standard deviation) for each measure considered.

Results

Synchronization variability in the no feedback and feedback IM conditions is related

Variability of asynchronies did not differ between the two IM conditions ($t_{63} = 1.930$, $P = 0.058$). Variability was correlated ($r_{60} = 0.575$, $P < 0.001$; controlling for participant sex and verbal IQ), indicating a relationship between performance on the no feedback and feedback IM conditions.

Synchronization variability in the no feedback and feedback IM conditions correlates with FFR measures

To determine whether there is a relationship between beat synchronization variability and phase-

locking consistency, neural stability, and envelope accuracy, partial correlations controlling for sex and verbal IQ were calculated. We found synchronization variability related with the three FFR measures for both IM conditions; better IM performance (lower variability) was associated with more stable, consistent, and accurate FFRs (r values and scatterplots are shown in Fig. 1). Figure 2 further illustrates the relationship between synchronization variability and phase-locking consistency.

Synchronization variability in the feedback IM condition relates to literacy skills

To determine relationships between beat synchronization and literacy skills, partial correlations controlling for sex and verbal IQ were calculated between synchronization variability during the two IM conditions and the phonological awareness, phonological memory, morphology and syntax, basic reading, and processing speed. A modest relationship was seen between the no feedback condition and basic reading, only. However, less synchronization variability (better performance) during the feedback condition significantly correlated with better scores on all of the literacy measures considered which are particularly important in the process of learning how to read (r values and scatterplots are shown in Fig. 3).

Factor analysis

To explore the structure of our set of variables and, at the same time, reduce our data set to a more manageable size without losing any information, we ran a factor analysis among all the behavioral and electrophysiological measures. The factor analysis revealed that the measures were best captured by two factors, one for the five behavioral measures (phonological memory, phonological awareness, morphology and syntax, basic reading, and processing speed) and one for the three neural measures (phase-locking consistency, neural stability, and envelope accuracy). All further factors had eigenvalues of less than 1, and the slope of the scree plot decreased dramatically between the second and third factors; therefore, we limited our analysis and interpretation to the first and second factors. These two factors appear to reflect literacy skills and temporal auditory skills (from now on, we will be referred to them, respectively, as “literacy” and “auditory processing” measures).

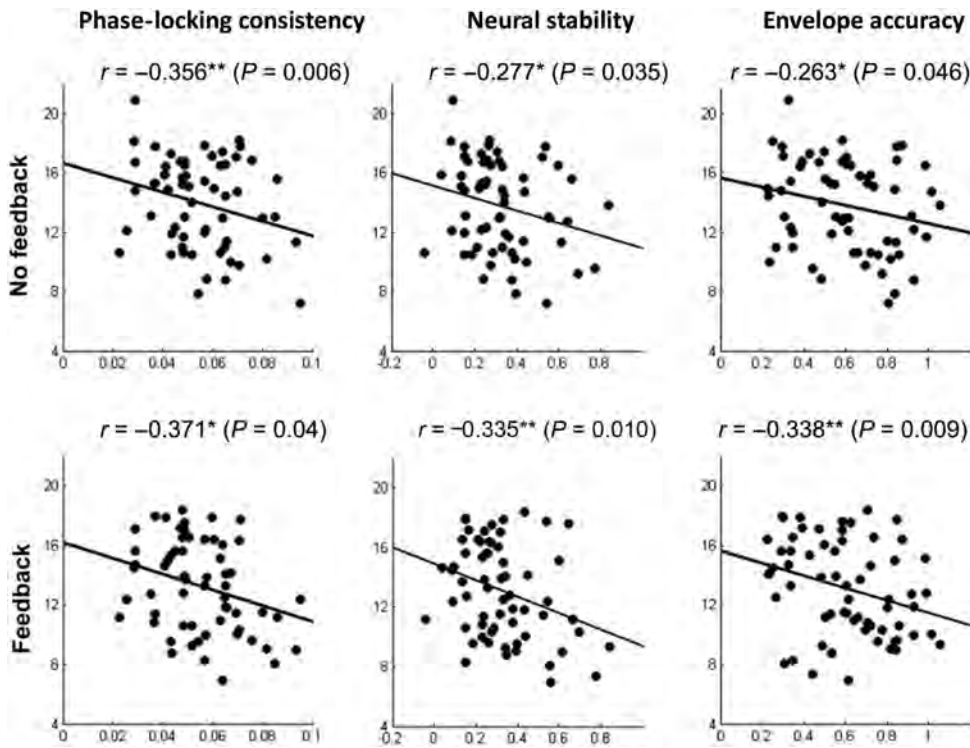


Figure 1. The variability of subjects’ clapping in time correlates with phase-locking consistency, neural stability, and envelope accuracy across both IM conditions.

The literacy factor accounted for 33.227% of the cumulative variance across the behavioral data set, whereas the auditory processing factor accounted for 25.890% of the cumulative variance across the neural data set. The KMO index was 0.640, indicating an adequate sampling, and Bartlett’s test of sphericity returned a significant result ($\chi^2 = 169.175, P < 0.001$). Table 2 shows the factor loadings after varimax rotation.

Auditory processing and literacy measures contribute independently to asynchrony variability in the feedback condition

To explore the contributions of auditory processing and literacy predicting beat synchronization ability, we ran two separate linear regressions using the synchronization variability of each condition as the dependent variable. Sex, verbal IQ, auditory processing measure, and literacy measure were considered as predictors. Only the auditory processing measure predicted subjects’ synchronization variability in the no feedback condition. In contrast, both auditory processing and literacy independently

predicted performance in the feedback condition. Table 3 shows full regression results.

Relationship between phonological memory and stability of the auditory system

In light of the results from the factor analysis and, specifically of phonological memory having a

Table 2. Summary of factor loadings after Varimax rotation

	Auditory processing measures	Literacy measure
Phase locking consistency	0.9	-0.01
Neural stability	0.918	0.007
Envelope accuracy	0.503	0.042
Phonological memory	0.398	0.492
Phonological awareness	0.023	0.859
Basic reading	-0.01	0.851
Morphology and syntax	-0.036	0.776
Processing speed	0.063	0.592

NOTE: Over 0.40 appear in bold.

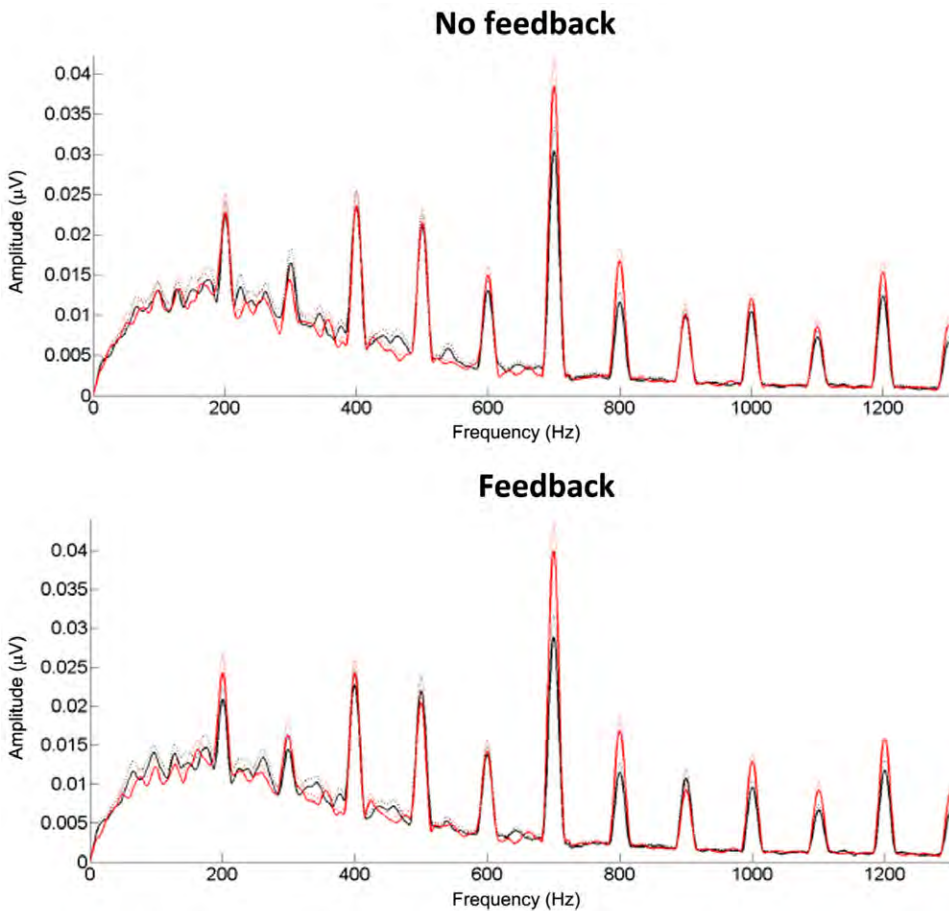


Figure 2. To further illustrate the robust relationship between intertrial neural phase-locking and clapping precision, participants were dichotomized as relatively poor ($N = 32$, in black) or good ($N = 32$, in red) synchronizers based on a median split according to their clapping variability. Subjects who show less variability (red) when clapping in time show greater intertrial phase-locking consistency in the FFR to the speech sound/da/, across peaks in the 200–1200 Hz range. The steady state period (60–170 ms) is displayed.

moderate loading onto both factors, we explored relationships among all the auditory processing and literacy measures considered by running partial cor-

relations between these measures controlling for sex and verbal IQ. Table 4 shows all partial correlation results. Only a relationship between phonological memory and neural stability was found, which supports the finding that phonological memory showed partial loading onto both the literacy and auditory Processing factors in the factor analysis.

A summary of the discovered relationships is shown in Figure 4.

Table 3. Results of linear regression

Predictors	Feedback IM	No feedback IM
	β	β
Auditory processing measures	−0.41**	−0.343*
Literacy measures	−0.462**	−0.205
Sex, verbal IQ	✓	✓
R^2	0.39	0.238

* $P < 0.05$.

** $P < 0.01$.

Discussion

This study reinforces evidence of relationships between synchronization ability and subcortical auditory processing, as well as literacy skills. For the

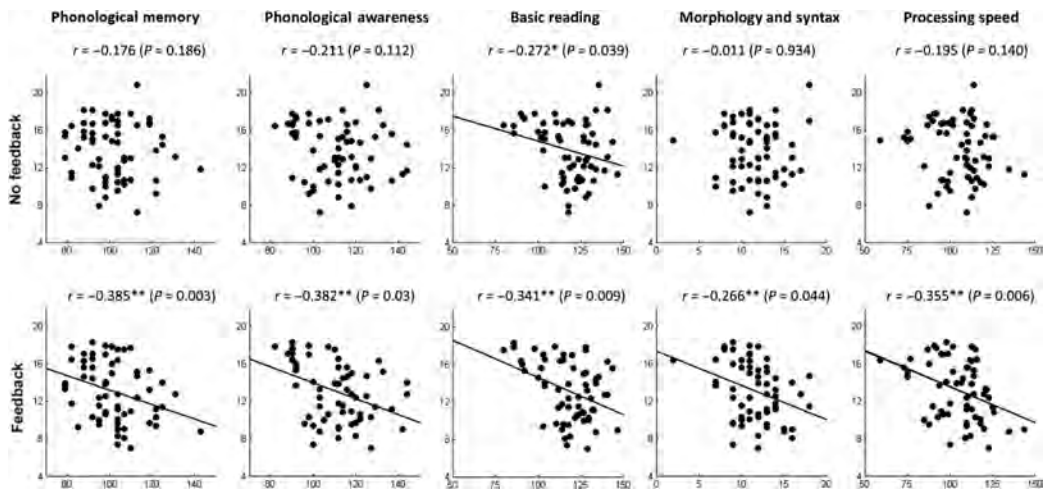


Figure 3. The synchronization variability of subjects’ clapping in time in the feedback condition correlates with performance on all tests of literacy skills; the synchronization variability of clapping in time in the no feedback condition correlates with basic reading skills only. Each panel is arranged such that better performance is to the right of the x-axis.

first time, we extended these links to a clapping-in-time task in a cohort of young typically developing children who were learning how to read. Moreover, we show that these relationships are strengthened with feedback.

Clapping in time represents an activity that almost everyone experiences since childhood. It requires global coordination and interaction between motor and sensory systems and a fine temporal ability to control the entire movement as to be on time. All these characteristics make it an appealing object of study. However, it represents an understudied paradigm in the sensorimotor synchronization literature, perhaps due to the complexity in measuring and controlling all the processes involved in it. Previous studies might have circumvented this issue by relying on simpler tasks such as tapping a finger or hitting a button in time. We were

instead able to deal with this complexity using IM technology.

As a beat synchronization task, clapping in time revealed relationships with the FFR measures previously shown to relate with drumming tasks,^{12–14} confirming the proposed involvement of the auditory midbrain in integrating precise timing information throughout the auditory system and influencing motor output.

In addition, the IM technology allowed us to take a step further and compare the specific impact of adding a visual component to a beat synchronization task, with the aim of providing real-time feedback on the actual performance. As we reviewed above, the more global integration required by the feedback condition results in stronger links between task performance and both subcortical processing of a speech sound and literacy skills. One possible

Table 4. Partial correlations controlling for sex and verbal IQ among all measures

		Literacy measures				
		Phonological memory	Phonological awareness	Basic reading	Morphology and syntax	Processing speed
Auditory processing measures	Neural stability	0.268 $P = 0.042$	0.049 $P = 0.715$	0.046 $P = 0.734$	0.058 $P = 0.665$	0.086 $P = 0.522$
	Phase-locking	0.210 $P = 0.113$	0.055 $P = 0.697$	0.052 $P = 0.696$	-0.038 $P = 0.774$	0.053 $P = 0.693$
	Envelope accuracy	0.203 $P = 0.127$	0.193 $P = 0.146$	0.089 $P = 0.508$	0.018 $P = 0.894$	-0.057 $P = 0.673$

NOTE: Values reported are Pearson r values.

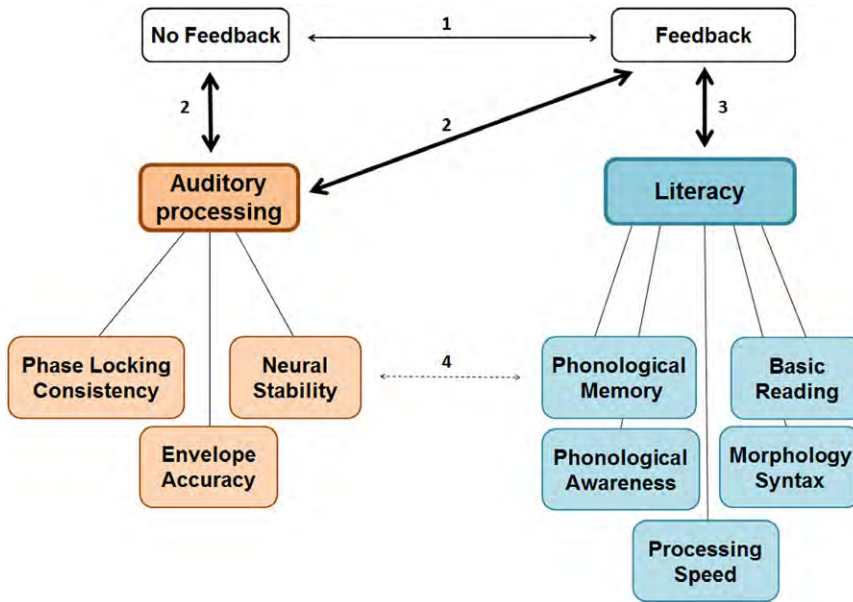


Figure 4. Summary of the discovered relationships. This diagram summarizes all the significant relationships among the variables considered. Specifically: 1. No feedback variability and feedback variability are related; 2. Both feedback and no feedback variability are related with “Auditory Processing” (phase-locking consistency, envelope accuracy and neural stability of the FFR as revealed by factor analysis); 3. Feedback variability is related with “Literacy” (phonological memory, phonological awareness, processing speed, basic reading, morphology and syntax are the five variables comprising “Literacy,” as revealed by factor analysis); 4. Neural stability and phonological memory are related.

explanation for this result may come from the numerous studies claiming the benefits of music training on the auditory system, and consequently on language development. In fact, by thinking about the experience of taking part in a music education program, it is easy to recognize the dynamic engagement that it requires across visual, auditory, and motor systems. Similarly, the clapping task with feedback seems to parallel most of the auditory-neural and cognitive processing systems activated when learning how to read, where a repeated and flexible interaction between auditory and visual systems precedes and sustains the reading act.

Another related, though different explanation could be that the presence of a visual component with the explicit role of giving feedback may have also motivated school-age children in the task, increasing their level of engagement, with a consequent beneficial impact on temporal processes. This hypothesis can be consistent with our finding that the temporal precision and adaptation activated in the feedback condition appear to be particularly related with phonological memory (the most highly

correlated measure), and both seem to depend on the stability of the auditory system.

Overall, the feedback condition seems to help the child to keep an internal temporal consistency and to follow the rhythm. This ability is necessary to organize temporal cues of speech sounds so as to facilitate the automatization of the grapheme-phoneme correspondence in reading. What probably underlies the results is not just the actual involvement of the visual system itself, nor the involvement of the feedback component, but also the combination of both, by making explicit the typical asynchronies and helping in reducing them, or at least making them more consistent.

In light of these findings, the use of IM seems to have potential as a remedial strategy for individuals who struggle with timing-based language learning impairments. We see the present study as providing interesting evidence in this respect, while at the same time it calls for further research. A limitation of this study is its basis on correlations and so we do not know the directionality or cause of these relationships. However, we are currently following

longitudinally the children involved in this study to monitor their development and to explore the possibility to predict development from synchronization skills at early ages. Another possible avenue could be conducting intervention studies using the clapping-in-time activities of IM or similar technology to directly investigate its impact on the detailed neural sound processing and on literacy skills.

Acknowledgments

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Competing interests

The authors declare no competing interests.

Author contributions

S.B., J.K., T.W.-S., and N.K. designed research; S.B. performed research; J.K. and T.W.-S. contributed analytic techniques; S.B. analyzed data; and S.B., J.K., T.W.-S., and N.K. wrote the paper.

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A conversation with Alexis Silver

with Alain Guilmette

(January 2018)

ALEXIS SILVER holds Bachelor degrees in Music and Education from the University of Manitoba, and is most known for her “incredible puns” (lame sense of humour). Alexis teaches Bands, Drama, and is the former Visual & Performing Arts Department Head at Sisler High School in Winnipeg. She served as a regional representative for, and is currently Vice President of the Manitoba Band Association. Alexis has guest-conducted throughout Manitoba (and beyond); has enjoyed playing, adjudicating, acting, and directing for the Manitoba Band Association, The Little Opera Company, The Winnipeg Wind Ensemble, Wahanowin Theatre, Leithelle Productions, Murder on the Menu, MTYP, and the Women of Note. Alexis believes in the healing power of music, and is an advocate for Music Education.



Give us a brief synopsis on how you became a music educator.

- Marlene Stephen was my middle school band director, and Bill Kristjanson was one of my high school band directors, so how could I not have become a music educator? Actually, I did my Bachelor of Arts as an English major before I wised up and auditioned for the School of Music.

Where and when were you born?

- I was born in the small town of Rothesay, New Brunswick (just outside of Saint John)... in the 1970s (can we leave it at that?)

Can you describe your early experiences with music?

- My Uncle David played piano beautifully, and I remember sitting on the edge of my Grandma’s sofa, listening and watching and **NEEDING** to do that. I started taking piano lessons when we moved to Winnipeg (when I was 5). My Grandma sat with me when I practiced. She never pushed, but she always sat with me. I think I felt a responsibility to practice, without really understanding what was happening. The gentle nudge. The consistency. The routine. I loved piano.

Where did you grow up and where were you schooled?

- I went to Robert Browning and Lincoln when we first moved to Winnipeg, then my family moved over to St. Vital. I went to George McDowell and Glenlawn for middle and high school.

Where did you go to University?

- I am a loud and proud University of Manitoba alumni. (I spent a while there... three undergraduate degrees and all...)

Who first got you interested in music?

- As I mentioned, my Uncle David and Grandma were my early, formative influences, but I need to credit my good friend Joanna for getting me interested in percussion in high school. I thought it was so cool, and so interesting.

Who and what inspired you to become a music teacher?

- Marlene Stephen, Bill Kristjanson, Marilyn Redekop, Fraser Linklater, Connie Turner, and David Moroz made me realize that being a music educator was where it was at. I did my Bachelor of Arts first, as an English major/Theatre minor. I was just about to graduate when I realized I did not really want that degree, nor did I want to do a masters or anything. So I went to Bill Kristjanson, and cried in his office. He said, “What do you love?” and I said, “Band”, and he said, “Well, be a band teacher dummy!”

Where did you first start teaching music?

- Other than teaching a little private piano when I was in University, I’ve been at Sisler the whole time. Connie Turner really helped guide me into Winnipeg School Division (and there were actual full-time band positions at the time I was looking for work).

Is your family also involved in music?

- They’re all drummers. My Dad (who passed away last year) played drum set and really got me into The Beatles and Stones and Pink Floyd, and my brother (who also plays set) got me into punk. My Mom is pretty tone deaf, but she was always my champion. She came to every concert and festival, and bought me my flute (when our family probably couldn’t afford it), and is a true music lover.

Who are some of the people who have made a significant impression on you over the years?

- Mostly, and I know this sounds as if I’m kissing up- but it’s unbelievably true- my MBA colleagues. I worship this association, and strive to be like the Jacquies, Simones, Annas, Janets, Grahams, Cheryls, Chads, Rosses, (and so many more) of the world.

Who are/were important musical & educational inspirations for you?

- I’d say Bill Kristjanson is and was and will continue to be. Ken Epp was my biggest professional inspiration. And, I don’t want to embarrass her, but I strive to be like Janet Yochim. Her openness and heart really inspire me.

What advice do you have for younger directors or recent graduates?

- Read books. Take care of yourself. Listen as much as you can (to people, to music). Get to know as many good people as you can (students, members, staff, community). Try REALLY hard not to sweat the petty stuff. And never trust how crappy you may feel in December and June.

You are involved with professional organizations, such as the MBA and the CBA. Please describe why this was important to you and if you would recommend others to do the same.

- Volunteering for events was a great way to get to know people, and I feel that I give a bit back to the people and “thing” that gave me so much. To be honest, I had to have my arm twisted when I was asked if I would let my name stand for nomination for the board, but I’m very glad I said yes! It is so interesting to see how the machine works. John Balsillie deserves a million dollars!

What is a memorable experience from your teaching career?

- Well, my Dad died last year right before Spring Break. When I came back to school on the Monday, the kids knew. They had written me a song. And they played and sang/rapped it for me. It was funny, and filled with heart. I was very moved that these lovely human beings spent some of Spring Break writing me a silly song so that I would feel better. I think that sums it all up. I love when we make beautiful music. I love when we really have true understanding of learning. But, it’s the small, stupid, meaningful moments that really make me know I chose the right job.

Describe a favorite concert or trip story.

- When I was a student, it was when we went to see the Count Basie Band. It was life-changing. As a teacher, I just friggin love going to Brandon. It's so fun (and there aren't a thousand hours on the dang bus). I was pregnant with Eli on a trip to Banff, and with Syd when we went to Chicago. You could not pay me to do that again (be pregnant... or be on a bus for that long). I have some funny stories from when I did my student teaching with Darryl Chrisp too, but you will have to ask me about that another time!

Why do you feel it is important for teachers to get involved in associations like the MBA & MMEA?

- The events cannot run without volunteerism and the events are what make for community and advocate for the importance of music education. I think it is so important to give back. The MBA and MMEA have done everything to support my career, professionally and socially, so it's important to give back.

How has the MBA supported your teaching career?

- The calendar maps my year. The members support and inform. Ken before, and now John, answers every question I have. PD is provided. Festivals and events enrich my students' and program's learning. Without the MBA, I don't think I would have made it as an Arts Educator.

What is the value of being able to participate in a school band program?

- For me, it gave me all the things that my Uncle and Grandma set up for me so early on, and when it became more difficult to "find my place" (middle and high school) it gave me a safe spot to "be with my people." I learned the life skills of consistency, routine, community, and success.
- For students now, it teaches life skills, provides safety, and helps enrich lives.

In 2009, you were the guest conductor of the Manitoba Junior Honour Band!

- Yes, I was. ☺ It was SUPER FUN!!!

Is there anything you would like to share with the Manitoba Band community?

- I flippin love you.

You remain a very active clinician and adjudicator. What are some trends that you have noticed over the years about band programs?

- Things are good. Solid. Musical. But, perhaps- I've noticed that there is a need for continued support of directors. We do a lot. We spend a lot of energy. We need to celebrate and care for ourselves and each other. Always. When some programs are getting smaller, and/or disjointed, and/or some educators have to wear many hats/teach several subjects, we need care.

WSO News | December, 2018

The holiday season quickly approaching, and although that likely means a frantic pace as you prepare your students for winter concerts, I hope that it is all followed by well-earned rest and time to refresh and reflect with family and friends. Everyone here at the WSO wishes you and yours a wonderful holiday season!

Experience live symphonic music with programs for all ages!

There are many opportunities for your students to experience the joy of live symphonic music this year. We do our best to make it easy for you to connect with us, and we provide a comprehensive, curriculum-connected experience that makes it easy for you to deepen your students' learning experience for students of all ages.

[Musical Discoveries \(Gr. 1–3\)](#) is just around the corner on January 14 & 15 and this year we welcome back Platypus Theatre, and one of their most beloved concerts for young audiences, [How the Gimquat Found Her Song](#). Your students will embark on a musical expedition across continents and through centuries to help a discouraged bird discover her unique voice. Students will laugh, chant and sing along with the Gimquat and her wizard guide as they explore musical styles from Gregorian chant to rap. With so much wonderful music to choose from, how can she ever find the song that's meant for her?

[Adventures in Music \(Gr 4–6\)](#) Maestro Julian Pellicano and the orchestra will explore the diverse world of music and language in [Our Music, Our Language](#). Students will discover the expression of this interesting relationship through poetry, song, drama and other forms such as improvised language and sign language. Plus your very own student performers in choirs, string, and recorder ensembles sharing the stage with the orchestra. Whether you are performing or enjoying from the audience, it's an amazing adventure—one your students will never forget.

Tickets for both of these programs are just \$7.25 and are still available at several performances (see *Important Dates* to your right). Contact us today to place your order!

Our [Student Matinees \(Gr 6–12\)](#) continues with three more fantastic concerts in the new year. These matinees are an affordable, comprehensive and compact symphony experience for your middle and high school students. Tickets are as little as \$10 and lesson plans, written by Cheryl Ferguson, are included free of charge with every ticket order.

Thank you for all that you do to provide your students exceptional musical experiences. That's our goal too, and I hope we get to work together this year.

See you at the concert hall,



Brent Johnson,
Education & Community Engagement Manager

Check wso.ca for more concerts!

IMPORTANT DATES

Musical Discoveries (Gr. 1 - 3) **HOW THE GIMQUAT FOUND HER SONG**

[Weblink](#) | [Order Form](#)

- Mon, Jan 14 10:30AM
- Tue, Jan 15 10:30AM
- Tue, Jan 15 1:00PM

Adventures in Music (Gr. 4 - 6) **OUR MUSIC, OUR LANGUAGE**

[Weblink](#) | [Order Form](#)

- Mon, May 13 1:00pm
- ~~Tue, May 14 10:30am~~ *SOLD OUT*
- Tue, May 14 1:00pm
- Wed, May 15 10:30am (*only 40 seats left*)
- Wed, May 15 1:00pm
- Thu, May 16 10:30am (*only 50 seats left*)
- Jeudi le 16 mai 13h00 (en Français)

Student Matinees (Gr.6-12)

RACHMANINOFF NO. 1

- Fri, Feb 8 10:05AM [Order Form](#)

MENDELSSOHN'S SCOTTISH SYMPHONY

- Fri, Mar 1 10:05AM [Order Form](#)

MUSSORGSKY: PICTURES AT AN EXHIBITION

- Fri, Apr 26 10:05AM [Order Form](#)

CONTACT INFORMATION

Seating & Payment Inquiries

Theresa Huscroft
Group Events Representative
Phone: (204) 949-3995
E-mail: thuscroft@wso.mb.ca

Program Inquiries

Brent Johnson
Education & Community Engagement Manager
Phone: (204) 949-3964
E-mail: bjohnson@wso.mb.ca



Manitoba Orff Chapter

MUSIC FOR CHILDREN - CARL ORFF CANADA - MUSIQUE POUR ENFANTS

Orffantastique avec Guylaine Myre



Vendredi, le 18 janvier, 2019

La salle Antoine-Gabourieau
au Centre Culturel Franco-Manitobain

8h30: Inscription

9h00-3h30: Formation (dîner inclus)

Inscrivez-vous ici :

www.manitobaorff.org

Cet atelier est présenté en collaboration
avec la DSFM.

Guylaine Myre

Guylaine Myre a complété ses études de Maîtrise en Éducation à l'Université du Québec à Montréal. Elle a suivi sa formation en pédagogie musicale Orff I, II et III à Montréal et a complété le Master Class à l'Université d'Alberta avec Jos Wuytack. Auteure de plusieurs comédies musicales pour enfants, animatrice d'ateliers Orff auprès d'enseignants et conférencière à divers Congrès nationaux, Guylaine a écrit « Mon français, je le chante! », dans lequel elle propose une panoplie d'activités musicales originales. De plus, elle a écrit les chansons, dirigé la narration et conceptualisé la trame sonore du livre CD « Maman est une tortue/ Papa est un dinosaure », édité chez Dominique et Compagnie. Elle enseigne auprès des enfants de l'école primaire Félix-Leclerc à Longueuil depuis 1989 et donne les cours Orff de niveau 1 dans différentes villes du Québec.



BUSMEA

Brandon University Student
Music Educator's Association

PRESENTS

DA CAPO

A one day professional development event designed
to enrich the learning of music educators

Saturday, January 19, 2019

Queen Elizabeth II Music Building

Visit www.brandonu.ca/busmea
for a look at what Da Capo 2018
had to offer

Contact
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more information on this
fabulous conference

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Desautels
FACULTY of MUSIC

2nd Annual Wind Band Teaching Workshop

Friday & Saturday, January 25 - 26, 2019

Craig Kirchhoff

Conductor Emeritus, University of Minnesota

Guest Clinician

Jacquie Dawson

University of Manitoba, Facilitator

University of Manitoba Wind Ensemble

Workshop Ensemble

Friday, January 25 2:00pm – 9:00pm &

Saturday, January 26 9:00am – 5:00pm

Large Ensemble Room T2-145, Taché Arts Complex
Desautels Faculty of Music, University of Manitoba



The University of Manitoba *Desautels* Faculty of Music will be hosting a Wind Band Teaching Workshop on January 25-26, 2019.

This workshop is available to band directors of all levels and offers a conducting participant stream and observer stream. Participants in both streams attend all sessions, rehearsals and discussions.

This workshop will explore philosophical and practical issues of teaching, rehearsing and conducting. Sessions will address pedagogy, rehearsal techniques, gesture, interpretation, repertoire selection and developing ensemble independence.

Workshop brochure, including registration details, can be found here:

[http://umanitoba.ca/faculties/music/media/Wind_Band_Workshop_2019\(1\).pdf](http://umanitoba.ca/faculties/music/media/Wind_Band_Workshop_2019(1).pdf)



Manitoba Orff Chapter

MUSIC FOR CHILDREN - CARL ORFF CANADA - MUSIQUE POUR ENFANTS



Join us for...

WINTER WORKSHOP 2019



with

AIMEE PFITZNER

February 9, 2019

8:45 AM - 1:15 PM

South Pointe School

615 Kirkbridge Dr.

Winnipeg, MB

Aimee is widely known for her [O Fortuna](#) music teacher blog as well as publications with Beaten Path Publications. Join us for a day of learning Aimee!

Click [here](#), [here](#), and [here](#) to check out some of Aimee's winter music lessons!



STUDENT NIGHT AT THE OPERA

ONLY \$13 PER TICKET | SUGGESTED FOR GRADES 6 & UP

Bring Your Students to an Opera Dress Rehearsal.

Book Now to Reserve the Best Seats!



The Barber of Seville

Thursday, April 4, 2019, 7:30pm

Centennial Concert Hall

Figaro! Figaro! Figaro!

It is one laugh after another in this crazy tale of close shaves, disguises, and hilarious antics. The scheming barber and jack-of-all-trades plots to help his friend the Count woo the lovely Rosina and enable her to escape the clutches of her lecherous old guardian, Dr. Bartolo. Does Figaro have enough tricks up his sleeve to outfox the old doctor, unite the lovers, and save the day?

With lovable characters, catchy music, and pure joy and silliness throughout, it is no wonder this comedic gem still tops the charts in popularity!

- Composed by Gioachino Rossini
- Sung in Italian with projected English translations

Group tickets can be purchased by K-12 schools, home schools, or youth groups.

Individual tickets are available for full-time post-secondary students (with valid student ID).

TICKETS/FOR MORE INFO:

SCOTT MILLER, EDUCATION & OUTREACH COORDINATOR

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MANITOBA OPERA

Student Night at the Opera

Teacher/Coordinator

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School mailing address

City Province Postal Code

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ORDER YOUR TICKETS:

Both performances take place at 7:30 pm at the Centennial Concert Hall

Performance:	<i>Don Giovanni</i> Thurs, Nov. 22, 2018	<i>The Barber of Seville</i> Thurs, Apr. 4, 2019
Number of Tickets:	_____ Students _____ Chaperones	_____ Students _____ Chaperones

ASSIGNED SEATING

All seating is assigned. Check your ticket for portal, row, and seat number. Seats will be filled on a first come, first served basis, so large groups may wish to place their orders early.

TICKETS

Limit of 1 teacher/chaperone per 9 students. Tickets will be mailed up to 10 days prior to performance date. Tickets purchased after that date can be picked up at Manitoba Opera between 9:30 am to 4:30 pm Monday - Friday or at Will Call starting at 6:30 pm the evening of Student Night. All tickets must be picked up by a teacher/supervisor from the school. *No refunds will be issued.*

Please arrive at least 20 minutes prior to performance. Latecomers will be seated at the discretion of the ushers. Concert Hall doors open at 6:30 pm; portal doors at 7:00 pm. Performance begins at 7:30 pm.

Total number of tickets: _____ x \$13 (includes tax)

Total Cost: _____

I require wheelchair seating.
(Please contact us with more information.)

Please mail, fax, or email your completed order form with payment to:

Manitoba Opera
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Fax: 204-949-0377
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To book tickets by phone:

Education & Outreach Coordinator
Ph: 204-942-7470

FOR OFFICE USE ONLY:

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Notes: _____

PAYMENT:

Cash: \$ _____ Cheque: \$ _____

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Signature



Journée Orff pour enfants Orff children's Day 2019

These are a few of my Favourite Things...



Un peu de mes joies quotidiennes...

9:00am – 3:30pm

Brandon University School of Music, Brandon

Friday, April 26, 2019 – English

le vendredi 26 avril – anglais

Centre culturel franco-manitobain, Winnipeg

Tuesday, April 30, 2019 – English –

LIMITED AVAILABILITY

Wednesday, May 1, 2019 – French and
French Immersion - **FULL**

le mardi 30 avril – anglais –

DISPONIBILITÉ LIMITÉE

le mercredi 1 mai - français et
d'immersion française - **PLEINE**

To Register/Enregistrer:

<http://www.manitobaorff.org/children-s-day.html>

Questions? Contact/des questions? communiquez:

Shannon Moses, shannon.moses@hotmail.com



Manitoba Orff Chapter

MUSIC FOR CHILDREN - CARL ORFF CANADA - MUSIQUE POUR ENFANTS

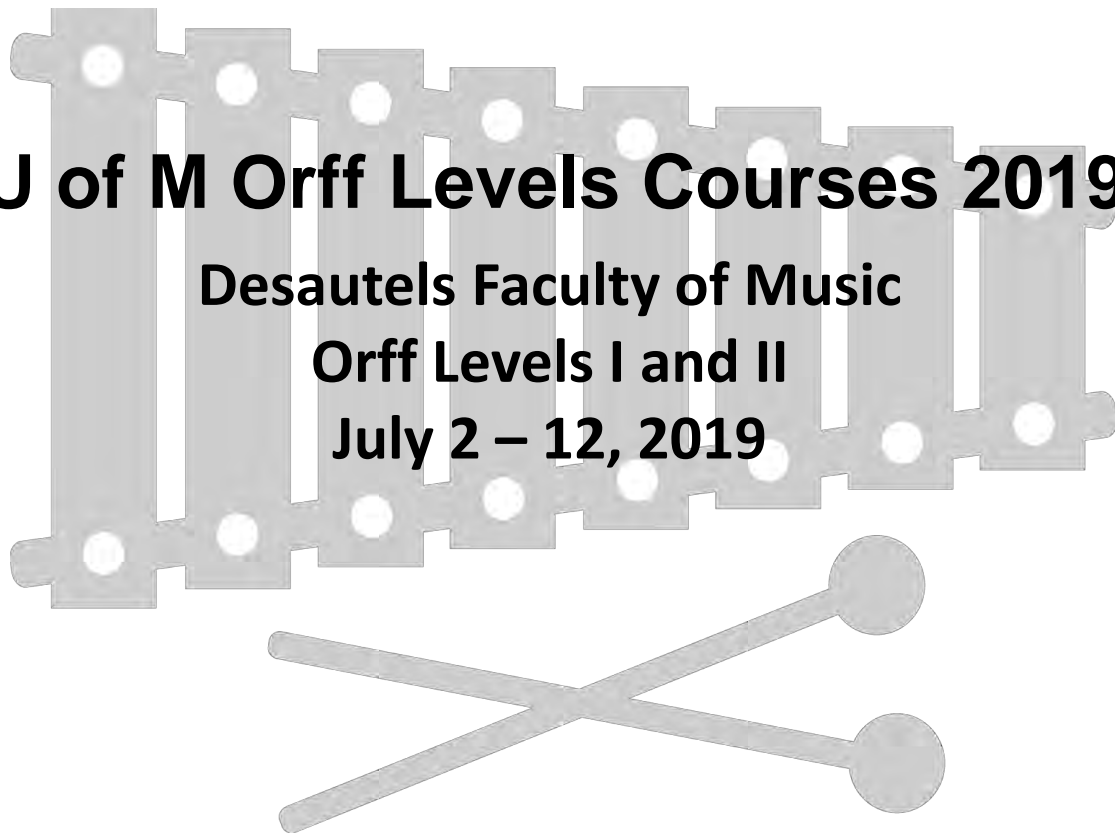


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Desautels Faculty of Music

Orff Levels I and II

July 2 – 12, 2019



Helen Neufeld Memorial Scholarship

awarded by the MOC to a deserving level II student.

Deadline May 17, 2019

For more information and to apply click [here](#).

COC Gunild Keetman Scholarship

awarded by Carl Orff Canada to a deserving level II student.

Deadline April 15, 2019

For more information and to apply click [here](#).



TEMPO

Friday, October 25th 2019

Well I'm sure that by now the October Music Conference is a bit of a blur to most of you and that you are well into the hustle and bustle of Christmas and Winter Concert preparations.

We are so glad that you had the opportunity to attend the Tempo: Manitoba Music Conference on Friday, October 19th, 2018. Our conference offered a venue for music educators from across the province to meet, to share areas of common interest and to expand their own learning.

The success of this conference and the excitement it brought would not have been possible without the support from our music community, the many volunteers, sponsors, the music industry, as well as the executives and members of MMEA, MBA, MCA, MOC, and MCGA. As a united voice, we are strong advocates for the value of music education within our province.

I want to personally thank the members of my committee. With excellence, each member worked very hard to put this conference together to offer something special just for you. I was so fortunate to work with each of them.

Now the planning begins for Friday, October 25th, 2019. Thank you to those who filled out the survey. I have gone through each one and was impressed with the quality of comments and suggestions. We do want to provide a conference that will offer each one of you a variety of learning opportunities and your input is valued. If you are interested in being considered as a presenter for Conference 2019, please check the MMEA website at mymmea.ca for the Tempo 2019 Session Proposal Application form.

May I take this time to wish you and your family a blessed Christmas and a restful holiday season.

Judy Giesbrecht
Conference Chairperson

Carl Orff Canada National Conference



Intersections 2022
Winnipeg, MB



Call for Steering Committee Members

The Carl Orff Canada National Conference returns to
Winnipeg 2022!

If you would like to join the steering committee,
please complete this form:

[2022 Conference Steering Committee](#)

The first steering committee meeting will be held on Wednesday,
January 23, 2019 at 7:00pm, location TBA.

Please contact any of the conference co-chairs with questions.

Mary-Lynn Berti- marylynn.berti@7oaks.org
Jewel Casselman- jicassel@mymts.net
Amanda Ciavarelli- aciavarelli@pembinatrails.ca

JOB OPPORTUNITY YOUTH STRINGS CONDUCTOR

The Winnipeg Youth Orchestras Inc. is seeking a Conductor for the Youth Strings Orchestra starting in September 2019. The Youth Strings is our entry level ensemble which is comprised of approximately 50 string players in school grade 3 or higher, with a minimum playing level of Grade 5 RCM or Book 3 Suzuki.

The ideal candidate will have the following qualifications:

Music skills:

Educator, preferably with a B. Ed. degree or equivalent

String player

Teaching experience both as a private instructor and in large group situations

Orchestral conducting experience

Knowledge of appropriate repertoire

Excellent communication skills

Job description includes:

Conduct all rehearsals, concerts, tour and camp

Organize sectionals, masterclasses, and auditions

Liaise with the other conductors in the organization

Monthly reports to the board

Applications should include:

Cover letter

Current CV with contact information

2 references

Applications should be sent to:

Administrator

The Winnipeg Youth Orchestras

PO Box 273

Winnipeg, MB, R3C 2G9

email: admin@winnipeg-youthorchestras.ca

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