

Wow, I Figured Out a Tune by Myself – Musical Problem Solving as the Ultimate Motivator

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I. Rationale:

First Year Goals in Beginning Instrumental Class:

1. Set-up
2. Tone
3. Intonation
4. Motivation
5. Note reading
6. Develop independent musicians

Solution: Separate Ear-based Learning and Note Reading

Ear-based Learning:

Advantages of ear-based learning:

1. Set-up easier without looking at notation
 - Looking at a live model engages mirror neurons [1]
 - Suzuki methodology utilize power of modeling
 - Working memory limitations cause students to focus on one thing at a time
2. Intonation linked to internal representation of tonal system
 - Children in western cultures develop an internal representation of the tonal system by age 5 as evidenced by spontaneous singing [2-4]
 - The brain reacts to unexpected chords similar to syntactically incorrect words [5]
 - Brain scans can detect when we hear music “inside our head”[6]
3. Allows musical problem solving in the classroom
 - Allows students to make mistakes and then fix the mistakes themselves. Experts are not afraid of making mistakes [7]
 - Let go of inefficient thought processes such as the desire to memorize fingerings
4. Allows development of creativity in beginning stages of learning
 - A creative product is novel & appropriate and the path to the solution is not prescribed [8].
 - Short improvisation exercises will establish ear-hand coordination

5. Builds confidence and motivates
 - Students take ownership of tunes they “figured out” by themselves
 - Being able to play a number of tunes by memory builds confidence
 - Performances becomes just “playing the repertoire”

II. Sub-skills:

Ear-training Sub-skills:

1. Pitch down/up and high/low
 - Piano exercises
 - Use vocabulary that always include pitch direction information
2. Form analysis
 - Analyzing the form will help ear-based learning as different sections can be labeled
3. Skip/step
4. Solfège/scale step numbers
5. Ability to sing on pitch (?)

Technical Sub-skills:

1. Scale and accidentals
2. Bowings
3. Advanced techniques if applicable (finger dexterity, vibrato, shifting etc.)

Theoretical Sub-skills:

1. Up/down high/low
2. Scale and skip
3. Form

III. Method:

How to Teach Improvisation:

1. Use call and response (beginning students):
 - Play a rhythm or short melodic fragment and call it the “question”
 - Have students repeat the “question”
 - Have students answer the “question”
 - Have students ask and answer their own questions as if they are “talking to themselves”
2. Use a known scale for improvisation (intermediate students):
 - Play the scale ascending and descending
 - Play the scale with rhythms dictated by the director
 - Play the scale with rhythms the students make up
 - Play the scale but change direction on a note other than the root an octave above
 - Play up and down the scale changing direction on any note
 - Add skips

How to Teach a Tune by Ear:

1. Listen to the whole song several times
 - Analyze form
 - Convey pulse and meter
2. Sing the song (maybe.....)
3. Teach the song using call and response:
 - Start with ONLY the first note
 - Add notes gradually till the first logical note grouping is complete
 - Add note groupings till the first phrase is learned
 - Repeat this phrase MANY TIMES (to piano, to CD, solos)
 - Take a break before teaching the next phrase
 - Use pizzicato (beginners)
 - Evaluate each performance trial during call and response
 - Go on to the next phrase only after correct trial by entire group
4. Air bow to recording
5. Play song in group
6. Allow students to practice individually during class
7. Add song to students daily warm-up routine

How to Integrate Musical Problem Solving in the Classroom:

1. Teach a tune by ear partially
 - Teach a tune by ear (see above) but leave room for improvement
 - Have students practice individually. Teacher can walk around the classroom and help students that have trouble
 - Divide the students into small practice groups pairing strong and weak students together
2. Have students figure out a known tune on their instruments
 - Pick a tune that all students know
 - Make sure needed sub skills have been taught
 - Give needed information (e.g. Figure our Jingle Bells: It uses the first five notes of the D major scale and starts on the note F#)
 - Give the students a set amount of time to figure out the tune
3. Musical games
 - Divide the class into teams. Make sure each team includes a strong “ear” player
 - Ask each team to pick a performer
 - Give the teams a set time to figure out a tune
 - Ask the performer from each team to play the teams version of the given tune
 - Have independent judges determine which team got closer to the actual tune!

Marsk Stig's Daughters



Track 85

Danish folk tune from
the Middle Ages

Musical score for Marsk Stig's Daughters, a Danish folk tune. The score is written in G major (one sharp) and 2/4 time. It consists of three staves of music. The first staff starts with a 'V' (Violin) marking. The second staff has a '6' marking above the first measure. The third staff has a '11' marking above the first measure and two endings labeled '1.' and '2.' at the end. The melody is simple and melodic, typical of a folk tune.

What To Do:

- 1) Use full bows throughout the tune.
- 2) Though the key signature is G major, the tune starts and ends on the note A. The tune is written in Dorian mode. A mode is a type of scale used in the Middle Ages.

Gavotte



Track 88

Traditional German

Musical score for Gavotte, a traditional German dance. The score is written in G major (one sharp) and 2/4 time. It consists of three systems of two staves each, labeled Violin 1 and Violin 2. The first system starts with a 'f' (forte) dynamic marking. The second system starts with a 'p' (piano) dynamic marking. The third system starts with a 'f' dynamic marking. The music is characterized by a rhythmic pattern of eighth notes and quarter notes, typical of a Gavotte. There are four measures in each system, and the piece ends with a double bar line and repeat dots.

What To Do:

- 1) Listen to the tune on the CD. Notice all the Mississippi Stop Stop rhythms. Now play the notes and try to make your left hand "keep up" with the bowing.
- 2) Learn both the violin 1 and 2 parts. The CD track has both voices separated into the left and right channels.

(Tunes above from Mel Bay's Modern Violin Method by M. Norgaard & L. Scott)

Beginning Method Books by Martin Norgaard & Laurie Scott:

Modern Violin Method, Grade 1, Pacific: Mel Bay Publications Inc., 2008. (Private studio/Beginner)

Modern Viola Method, Grade 1, Pacific: Mel Bay Publications Inc., 2008. (Private studio/Beginner)

Jazz String Method Books by Martin Norgaard:

Jazz Fiddle Wizard Junior, Mel Bay Publications Inc., 2002. (Middle School)

Jazz Viola Wizard Junior, Mel Bay Publications Inc., 2002. (Middle School)

Jazz Cello Wizard Junior, Mel Bay Publications Inc., 2002. (Middle School)

Jazz Fiddle Wizard Junior, book 2, Mel Bay Publications Inc., 2005 (Middle School/High School)

Jazz Viola Wizard Junior, book 2, Mel Bay Publications Inc., 2005 (Middle School/High School)

Jazz Cello/Bass Wizard Junior, book 2, Mel Bay Publications Inc., 2005 (Middle School/High School)

Jazz Fiddle Wizard, Pacific: Mel Bay Publications Inc., 2000. (College)

Getting Into Gypsy Jazz Violin, Pacific: Mel Bay Publications Inc., 2008. (High School/College)

Jazz String Orchestra Arrangements by Martin Norgaard:

Swing On A String, FJH Music Company (grade 3)

Swing There Done That, FJH Music Company (grade 2)

Stringin' The Blues, FJH Music Company (grade 3.5)

Calyпсо, FJH Music Company (grade 1.5)

Molecules and Stars, Alfred Publishing Company (advanced, grade TBA)

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4. Mang, E., *The Referent of Children's Early Songs*. Music Education Research, 2005. **7**(1): p. 3-20.
5. Koelsch, S., et al., *Interaction between syntax processing in language and in music: An ERP study*. Journal of Cognitive Neuroscience, 2005. **17**(10): p. 1565-1577.
6. Kraemer, D.J.M., et al., *Musical imagery: Sound of silence activates auditory cortex*. Nature, 2005. **434**(7030): p. 158-158.
7. Horn, J. and H. Masunaga, *A Merging Theory of Expertise and Intelligence*, in *The Cambridge handbook of expertise and expert performance.*, K.A. Ericsson, et al., Editors. 2006, Cambridge University Press: New York, NY US. p. 587-611.
8. Amabile, T.M., *Creativity in context: Update to 'The Social Psychology of Creativity'*. 1996, Boulder, CO,US: Westview Press. xviii, 317.