

# Guiding Students to Intonation Independence

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My band and I are on a quest. It is a year-long endeavor, including highs and lows that will culminate one day in late spring when I stand on the podium, and the band finally, majestically, plays in tune! The quest starts over each and every year, and it's never the same quest twice. Following are the philosophies, strategies and techniques I use to guide my musicians on this journey to intonation independence!

Students play in tune with each other when they:

1. Play with quality sound
2. Understand how to manipulate notes purposefully sharp or flat without sacrificing tone quality
3. Know what chord they are playing and can properly adjust their tuning responsibilities (in real time as the chord shifts around their individual parts)

Teaching with this three-part philosophy creates an ensemble of players who listens for their own sound, and the way their sound fits with the sound around them. They listen because they know what to listen for. Each type of chord, major, minor or otherwise, inherently possesses a certain feel. Great players are great listeners who maneuver and mold their sounds within the chords being played until everything resonates correctly.

The specific processes involved in teaching these three responsibilities utilize technology available to students that meets them where they are. My students in 2014 rely on visual learning far more than students did even ten years ago. We are now starting to see students in our bands that have grown up with access to multiple hand-held computers at home on a daily basis.

Here's an example of the society in which these children have grown up. Recently, my youngest daughter asked to take my wife's iPhone to school. When asked why, she explained that her teacher requested that each student bring a baby picture to school for a class project. My daughter assumed the only way to transport a photo to school was to take it there on an iPhone. It did not even occur to her that we could print a photo on paper!

With this reality in mind, and the amazing capabilities of these electronic devices, I work to capitalize on my students' fascination with, and ubiquitous access, to smart phones and tablet computers. My goal is to utilize visual reinforcement of the desired aural result: playing in tune with others.

## First Things First

It is extremely important that the band director clearly define intonation routines and expectations for the students from day one. We must determine ahead of time how the students will tune their instruments and how they will manipulate individual pitches. The specific methodologies will often differ from instrument to instrument. The first days of the school year are vital to establishing a pattern that will lead to success; whether you are in a newly created band position, a recently vacated band position or a brand new band program. I find intonation training is most successful in a small group setting—usually beginning with sectionals in summer band and continuing in band sectionals throughout the year. The most important thing to remember at the beginning of the year is that students must make characteristic sounds on their instruments first in order to tune those sounds.

## Tuners

Each student in the ensemble has a personal tuner with contact microphone, although these tuners are used within specific parameters. Band instruments are built to play in tune at operating temperature. Before each rehearsal, the students

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are instructed to “warm up” the instrument – literally – to operating temperature for at least two minutes before ever turning on their tuners. In addition, students are explicitly banned from looking at their tuners as they start a tuning note. Instead, the student is told to hold the note until they locate the core, resonant sound while looking away from their tuner. They should always play notes down the center of their horns. Once the characteristic sound is achieved, the student can glance at the tuner, and adjust the instrument to bring it in tune.

## The Harmony Director

The year-long journey begins as described above. The next step in the process, however, occurs throughout the year. I play pure major and pure minor chords for the students using the Yamaha Harmony Director while they rehearse together in sectionals. While I play the chord, the students refer to their individual tuners in real time. We all use the same model of tuner, the Korg TM-50, so that we can reference that the third of any major chord lands at “the dot within the wedge” on the left, which is 13.7 cents flat on the Harmony Director in pure temperament. Likewise, we all adjust our third of the minor chord to “the wedge” on the right, which is 15.6 cents sharp on the Harmony Director.

This produces (for the students) a marriage of:

1. Aural input from the Harmony Director, and
2. Visual positive reinforcement from the Korg TM-50 tuner.

For those of you who are tuning buffs, the Korg TM-50 tuner does not register “2 cents sharp” when you isolate the fifth in pure temperament using the Harmony Director. Additionally, there are multiple findings that suggest that the human ear can only pick up a harmonic adjustment of 5 to 8 cents. (This includes UIL judges!) As a result, I have made

the conscious choice not to concern myself with adjustments to pure fifths in my ensembles.

I tend to look at all harmony as centered around either a major chord or minor chord. Thus, I approach an added 9<sup>th</sup> or 7<sup>th</sup> as a “color tone,” coloring the base chord and (in the case of a dominant seven chord) sometimes giving it harmonic motion. This leads the listener towards the next key center. As a result, I do not concern myself with harmonic adjustments to color tones. I have experimented with this for years and have been quite pleased with the resonance of the band once I finally made the commitment to only adjust thirds and look upon all other added 7<sup>ths</sup>, 9<sup>ths</sup>, 4<sup>ths</sup> and 6<sup>ths</sup> as color tones played without adjustment.

Once students consistently demonstrate the ability to navigate successfully the varied chordal responsibilities detailed above, I move that expectation out of the section rehearsal and into the band hall.

## Score study!

Great teachers and mentors in my life have always insisted that score study be completed before introducing a piece in sectionals, and I have heeded their advice to great benefit. Once I have my score study completed, I dedicate two to three sectionals on a piece (or movement) before moving it into the band rehearsal. This methodology allows me to infuse appropriate style, articulation, dynamic range and chordal responsibilities into a new piece in a small-group setting. Tuning is also best approached first in a small group, where there is less to listen through. I have learned from these very wise mentors to look at every musical phrase as utilizing either vertical tuning or horizontal tuning

- Horizontal tuning (equal temperament) - a musical line that does not interact “chordally” with other voices sounding at the same time. Often this is an ostinato, motif, sequence, or independent melodic line / counter

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line. I have learned to look at this line in the score as a “horizontal” moment, as we read the independent line from left to right. All players that are in unison or octave who share a horizontal phrase would perform the line in equal temperament.

- Vertical tuning (pure temperament) - a moment in the score where multiple voices in the ensemble combine vertically across the height of the score to create a chord that would necessitate pure temperament adjustments from specific players.

Like their director, students are expected to write the chord analysis in their music. This is a very time-consuming process and must be done in sectionals. As we come upon a “vertical” moment, we stop and isolate the chord. I always play the chord on the Harmony Director while the students sustain their notes. The typical result is a very uncomfortable musical moment—a sustained chord with multiple flutters and beats around the room as students struggle to place their notes properly inside the chord being played by the Harmony Director. I then ask the section to make a couple of decisions aloud. Is this chord major or minor? What is the root of the chord? The entire process does take time at first, but by the end of the year, the students can often figure chords out by ear and it goes more quickly.

Once we have answered the key questions, I ask the students to write this information into their music. Students with the third circle the note. This is our shorthand for “adjustment needed.” They raise their pitch for minor and lower it for major. The fun part comes once we play the same phrase again and stop on the vertical moment. On the second try, with their chordal responsibilities written in, the students make the appropriate changes in their playing, and voila! A beautifully in-tune chord (or, at least, noticeably better) that they took responsibility for making.

## Tonal Energy Tuner

I keep the *Tonal Energy Tuner* app open and active during each sectional on an iPad. I use the *Analysis* tab exclusively to record students down the row. We band directors have grown up playing for our own teachers “down the row”—receiving short feedback after our performance before he/she moves on to the next student. I go about it in much the same way, however I use the *Analysis* tab to record the students down the row and play the recording back for them instantaneously. I pair the iPad with a Bluetooth speaker during the sectional so that I can stay mobile and show the students the spectral analysis and wave form of the performance as he/she listens to the playback.

There are a few logistical components involved in going down the row using the *Tonal Energy Tuner*. I keep an audible metronome clicking continuously throughout the recording for all students to hear. I ask each player in the section to wait 8 clicks (sometimes 12 to 16 depending on the current tempo) after the student preceding them finishes his/her excerpt. The student then performs his/her excerpt without interruption while maintaining a steady tempo. Once I have gone down the row and each player has performed, I stop the recording, save it, and immediately begin playback. The students are reminded to watch carefully the visual analysis while critically listening to the performance. They are expected to give a short and constructive comment aloud immediately following playback. Their comments must fit within the recorded beats of rest between players. This keeps rehearsal pace moving.

I hold the iPad in front of each student and press play . . . moving down the row once each player gives his/her self-assessment. With a little coaching, the students become very adept at focusing their comments on one thing that can make their performance better

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in the future, rather than picking apart each mistake made in the past. This activity utilizes technology to capitalize on the students' cultural dependence on visual reinforcement and empowers them to interpret and analyze more readily what their ears are hearing in terms of intonation, tone, articulation, air flow and overall body of sound (overtones).

## Taking off the training wheels

By Pre-UIL in the spring, the students are so much more adept at adjusting their chords that tuning becomes almost second nature. By now, the individual tuner on each stand gets in the way of the students' musicianship. We keep the tuners on the stand for independent warm-up and tuning at the beginning of rehearsals and concerts, but turn them off once we are working on the music. It is amazing to hear the difference between a band at this stage playing with their tuners up and running, and the same band playing the same music with their tuners off. If the band has been working toward intonation independence all year, they will be ready to tune independent of the machine. The students move their performance to a level above all the individual pitches and the technological gadgets. They make music together infused with their intellect, passion and energy. The quest has reached its objective, and this is the moment of triumph... for this year!

## Join the quest!

I welcome any questions that you may have regarding your own journey as we guide our students towards intonation independence: [jason.schayot@risd.org](mailto:jason.schayot@risd.org).

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