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This month with Rodney Whiteman, North Central District Governor

Music and cognition: What we learn when we play

Most of us have an intuitive sense that music makes us perform better in other areas of our lives. We learn intellectual skills from rehearsal, stress management skills from performance, and an appreciation for our cultural heritage. However, knowing more precisely what and how we learn from music can help us improve our bands and what we get out of our band experiences.

In this issue, Rod Whiteman, North Central District Governor, describes his work with younger students to put words to skills. By describing these musical concepts, they put

them in the context of their other academic work. The students are able to understand the role of rehearsal, practice, and performance in their curriculum. They are able to understand what about their musical participation made them smarter and sharper, and can apply this information to all areas of their studies and lives.

If you have questions, contact me at mmatney@umich.edu. Your work in band today can lead to greater heights tomorrow!

Malinda

Organizing our thoughts – learning how it is we learn

by Rod Whiteman, North Central District Governor

Music educators coalesce around research that espouses benefits of studying music. Data concerning SAT scores, class rank, and college success suggest at least a correlation. After a recruiting meeting where one of my colleagues presented this information to parents, I was struck by how easily we all accepted these data as truth. We desperately want research to support what we music educators already know: musicians just think differently than non-musicians. Why?

Why do music students think differently than students of other disciplines? I was trying to develop a formal assessment for my students about rehearsal skills and performance skills. I needed to know if they intellectually grasped the concepts and were not following through in practice. It dawned on me that many of the things that musicians should be doing while rehearsing and performing were higher order thinking skills. Going back to a generally accepted educational theory of Bloom's Taxonomy, I realized that my expectations were for students to be constantly moving up and down that taxonomic ladder, and I wanted students to be self-aware enough to do it on their own. This conclusion led me to a clue to my question of why musicians think differently. We have to if we want to be successful.

I developed the rather uninspired term of "Musician Think" and proposed a question to my students: what must you do to be successful in choir? We began generating an extensive list of skills including such things

as bringing materials to class, sitting up straight, singing in tune, and matching the tone of people around them. The students then grouped together those skills that seemed to go together. For example, having good posture and breathing deeply; or singing in tune and performing correct rhythms. The list of skills seems to collect around nine categories.

Anticipating – Students should make adjustments and corrections without waiting for the conductor to ask them to do so.

Applying Prior Knowledge – Students should draw on skills, concepts, and experiences that would help them have a better understanding of the music and their performance.

Attention to Details – Students should sing correct pitches and rhythms with appropriate articulation, dynamics, and timbre.

Focus – Students should have their head in the game and always be in "performance mode".

Internalizing – Students should make the music their own through emotional memory and complete understanding of the text and the composer's intent.

Listening and Analyzing – Students should always be listening to themselves and others and should be making evaluations on technique and style.

Motivation – Students should strive for constant improvement and work to make at least one aspect of performance better with each run-through.

Physical Engagement – Students should sit or stand with excellent posture and breathe correctly at all times.

Preparation – Students should have their materials for rehearsal and should have practiced their music to the expectation of their conductor.



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How can these themes shape rehearsal and performance?

Every rehearsal and performance expectation I have of my students is in that list. Musicians should be constantly engaged in the rehearsal, mentally, physically, and emotionally. Musicians should constantly make adjustments to technique, style, and interpretation (without being told, in many cases) to be part of the greater whole – the ensemble.

Comparing these nine Musician Think concepts to Bloom's Taxonomy clearly illustrates how musicians are trained to think much more holistically. Consider the relationship between the two as I relate them:

Musician Think Skills	Bloom's Taxonomy Competences
Anticipating	Knowledge, Comprehension, Application, Analysis, Synthesis, Evaluation
Applying Prior Knowledge	Knowledge, Comprehension, Application, Synthesis
Attention to Details	Knowledge, Comprehension, Application, Analysis, Synthesis, Evaluation
Focus	Knowledge, Comprehension, Application, Analysis, Synthesis, Evaluation
Internalizing	Comprehension, Analysis, Synthesis, Evaluation
Listening and Analyzing	Knowledge, Comprehension, Analysis, Synthesis, Evaluation
Motivation	Comprehension, Application
Physical Engagement	Comprehension, Application, Synthesis, Evaluation
Preparation	Knowledge, Comprehensive, Application, Analysis

This table is not to say that this is the only way the two can be related, just what made intuitive sense to me at the time.

It would also be worth exploring the relationship between Musician Think and the seven intelligences as described by Howard Gardner. However, Gardner's theory and Bloom's should not be used to describe the same events as they were developed for different purposes. It can be noted, however, that Musician Think may be processed by different centers of intelligence. For example, internalizing may be processed by the personal

intelligences. Physical engagement and attention to details may be processed by bodily-kinesthetic intelligence.

Music educators should consider Musician Think when designing their classroom environments. By insisting that students take more ownership of the rehearsal and insisting that they make more decisions, you will actually make the rehearsal process more fun, interesting, and rewarding. You will give students the freedom to make music at every opportunity, not just during performance. In doing all of this, you have the added benefit of expanding how students think.

So why do musicians think differently? With only anecdotal evidence, it seems safe to conclude that reaching for high standards of musical excellence engages more thought processes than most academic activities. Participating in a music rehearsal is intrinsically active where lecture classes are passive, at least proportionally much more passive than ensemble participation. Note the assumptions and implications for maximizing the effects of studying music. There must be a constant drive for improvement necessitating constant analysis, hypothesis, application, and evaluation. In the best rehearsals, students will not have to be told how to phrase more musically; the conductor can just bring attention to the need for better phrasing and allow the students to experiment and adjust. Music teachers should establish knowledge initially and then ask questions to activate that knowledge and allow students to find their own solutions.

I did not gather empirical evidence to support the concept of Musician Think. I know that it works in my classroom. I know that emphasizing these skills builds independent and critical-thinking music students. It is the responsibility of the educator to let the students know how developing those skills can be beneficial in other academic disciplines and life in general.

For further reading, consider:
Bloom, B S. *Taxonomy of Educational Objectives*. Boston: Allyn and Bacon, 1983.

Gardner, H. *Frames of Mind: The Theory of Multiple Intelligences*. 2nd ed. New York: BasicBooks, 1993.

Marzano, Robert J. *What Works In Schools: Translating Research Into Action*. Alexandria: Association for Supervision and Curriculum Development, 2003.