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Music

A Powerful Teaching Tool

Writing about music is like dancing about architecture—it's a really stupid thing to want to do.

—Elvis Costello

Music and Mankind—Arguments and Theories

Music has a powerful influence on our lives. It can calm us down when we are stressed or energize us when we are tired. It can move us to laughter or tears. It can raise goose bumps on our arms or raise us to the heights of religious feeling. For years, philosophers, psychologists, and musicologists have been asking *why* and *how* does something as simple as the structured arrangement of sound waves achieve all of this? While we are still far from having any kind of detailed, definitive explanation for all of music's effects, each year research unravels a bit more of the mystery. This book reveals the practical implications of this research on the use of music in educational settings.

Before we begin our more specific discussion of how teachers can harness the power of music in their classrooms, let's take a few

minutes to glance at the bigger picture. To understand the wonderful possibilities we see for an expanded role for music in the classroom, we first need to grasp the current arguments and theories about music's origins and uses, its effects on the human psyche and physiology, and how fields other than education have begun to use it in various ways.

Cultural or Universal?

One of the biggest of the big picture questions, which has been hotly debated for years, is whether our response to music is cultural or universal. This is one of those "nonargument arguments" similar to the old nature versus nurture debate—neither side is *right* (to put it another way, *both* sides are right to some extent). The argument really comes down to one about percentages: How much of our response to and appreciation of music is universal and how much is culturally determined?

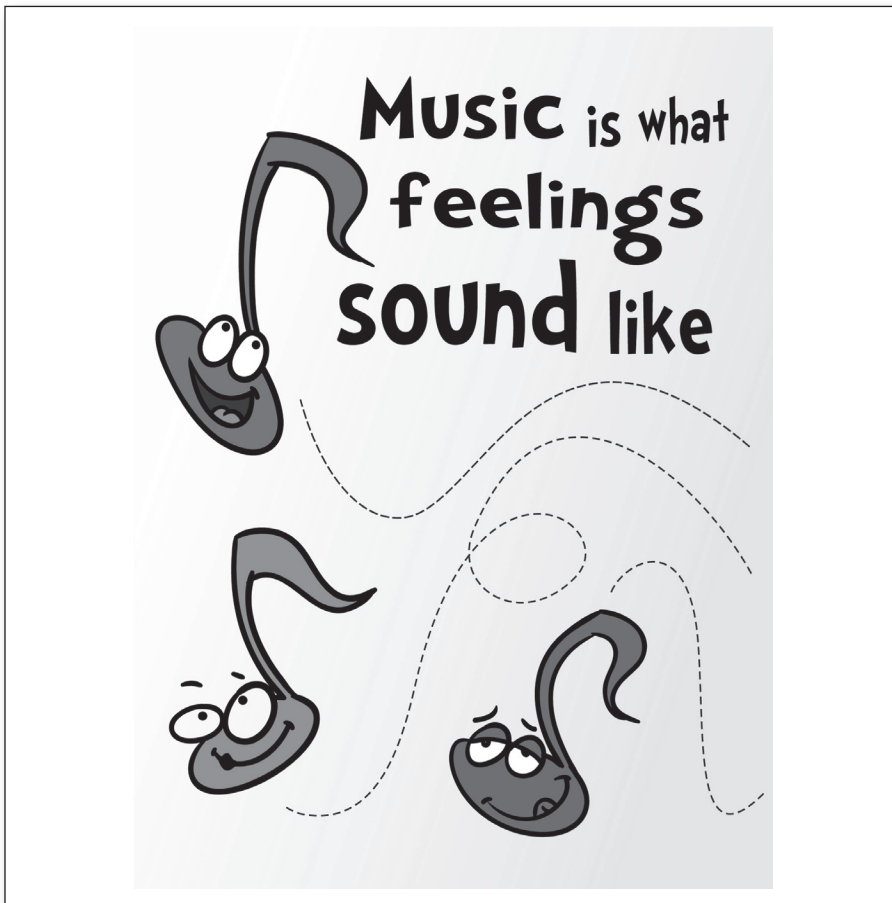
In his classic 1956 book, *Emotion and Meaning in Music*, musicologist Leonard Meyer argues that the musical experience of any listener involves expectations, and these expectations are based on the listener's cultural experiences with music. When the music conforms to our expectations, Meyer explains, we relax and enjoy the ride. However, when our expectations are not met, we experience tension. Artful composers play with these expectations, establishing a musical theme or structure, then violating it in any number of ways, before (usually) resolving those violations and bringing the tune back "home" to satisfy our expectations. Most people tend to prefer music that teases our expectations like this—if it's too predictable, it's boring—but only if our expectations are ultimately satisfied. If the music wanders too far from our expectations, it simply sounds wrong. This is why most people tend to enjoy the music of their own culture more than music from other cultures.

On the other hand, while different cultures certainly have different expectations of their music, there is plenty of evidence to support the case for universality. For example, all human cultures make music and have done so for a very, very long time. Archaeological evidence—such as bone flutes and drums—proves that mankind has been making music for at least 30,000 years.

Also, while we may prefer music from our own cultures, some elements of music produce consistent effects across cultures. Research by Laura-Lee Balkwill and William Forde Thompson (1999) found that when Western listeners were asked to identify what emotion

(joy, sadness, anger, or peace) was being conveyed by twelve Hindustani ragas, they performed at a better than chance level, despite the fact that they were completely unfamiliar with the tonal system and the raga-rasa system of conveying moods. Similarly, Fritz and colleagues (2009) at the Max Planck Institute for Human Cognitive and Brain Sciences asked members of a native African population (Mafa) what basic emotion Western music was intended to convey. Once again, subjects were able to identify the correct emotion (happy, sad, or scared/fearful) at a better than chance level, though less reliably than native Westerners.

Weighing in heavily on the side of innate versus learned, recent studies have shown that infants can detect a number of musical features even before they can talk! In carefully constructed experiments by patient researchers such as Sandra Trehub (2003), infants sit on their mothers' laps between two speakers, while a researcher plays



with a toy in front of them to focus attention. Music plays from one or both of the speakers while the researchers subtly change something about the music (its key, tempo, or pitch). These experiments have determined that, when sound features change, infants will turn toward the speaker. In most cases, infants can detect these fundamental musical features as well as adults.

Why does any of this matter for teachers? We think that there are two broad “take away points”: (1) wherever in the world you teach, and no matter what culture your students come from, they *will* respond positively to music in your classroom—that’s pretty much universal; and (2) if you can find and use a number of musical selections in your classroom that come from your students’ culture(s), they will be even *more* likely to enjoy them, as they will have a certain familiarity and comfort level with that music.

Why Does Music Affect Us? Some Theories

Research has yet to establish a definitive answer to the question of *why* we get such pleasure from the artful arrangement of sound. However, several interesting theories have been proposed.

One is that music has some yet-to-be-understood adaptive evolutionary value. Some evolutionary psychologists have theorized that the arts (storytelling, humor, wit, music—indeed creativity itself) evolved as forms of courtship behavior. If music doesn’t have a clearly “practical” use, maybe it’s the sonic equivalent of the peacock’s tail.

Other theorists who believe in music’s adaptive value point to the fact that human beings prefer note combinations that mimic natural sounds. Since as far back as Pythagoras, we have known that two notes played simultaneously sound harmonious if their acoustic frequencies are related in simple ratios. For example, notes an octave apart have frequencies in the ratio of 1:2, and the so-called “perfect fifth,” such as a C and the G above it, have a ratio of 2:3. Researchers note that these preferred combinations of notes with simple frequency ratios are also generated in the natural world, whereas combinations of sounds with complex frequency ratios tend to sound jarring. Some scientists have theorized that an auditory system that seamlessly blends more natural sound frequencies into a single perceived note (as our human auditory system does) would be selected for by evolution, since it would provide a more accurate representation of the sonic world around us. And since we clearly prefer to hear such consonant sounds, music makes use of them the vast majority of the time—and therein may lie much of its appeal.



Others believe music acts as social glue, pointing to its use in important events. Within any culture, whenever people get together to celebrate (a birthday, wedding, or graduation), mourn (funerals), or worship, music is almost always a key component. For that matter, whenever people gather with no other object than to simply have a good time, music is almost always present. Why does music help create social cohesiveness? Robin Dunbar (1997) of the University of Liverpool suggests that music originally helped to bond social groups that had grown too large for grooming. Other researchers have suggested that the social benefits of music grow out of our tendency to want to move to a beat. Studies have shown that when people listen to music, motor regions of the brain activate to process the rhythm. These regions include the cerebellum, which helps us to smoothly coordinate physical movements—movements as simple as tapping a foot or as complex as dancing—to match a rhythm. Thus, when a group of people synchronize their movements to the same rhythm, you have a party—or at least a line dance!

One final theory challenges both the evolutionary adaptation theory and the social-glue theory. Noted psychologist Steven Pinker believes that music is no more than a happy evolutionary accident, a by-product of the development of other parts of the brain that evolved for more “useful” functions, such as language. In fact, in his book, *How the Mind Works*, Pinker (1997) famously called music “auditory cheesecake,” suggesting that it is no more than a pleasant evolutionary add-on to the main course (p. 534).

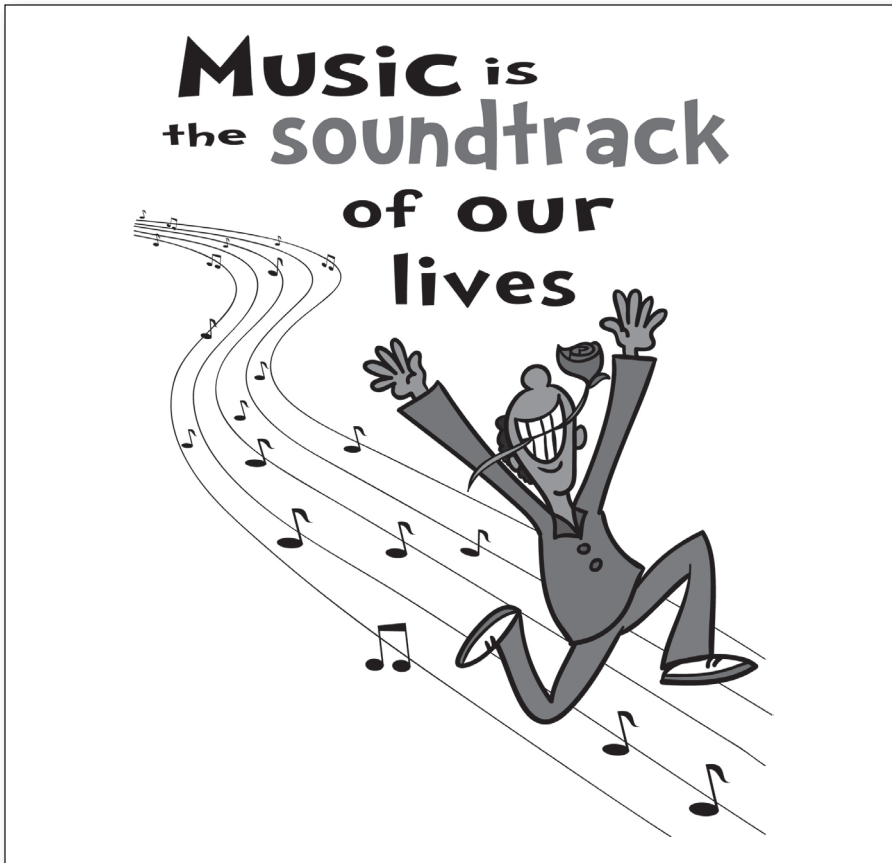
Who’s right? Who knows? And more important, for our purposes, why should teachers care? Certainly, it doesn’t much matter to us whether music served some unknown evolutionary purpose, or whether, as Pinker believes, it is just some fortuitous accident. What really matters is not so much music’s origins as its obvious importance in everyday life. Clearly, music plays an important role in the emotional lives of most people, and especially in the lives of our students outside of school. If music permeates all other aspects of life, surely there are potential benefits to using it in the classroom. To us, it’s really not a matter of *whether* we should use music in the classroom, but *how* we can use it effectively—and that’s what this book is all about.

How We Use Music in Everyday Life

Music is rapidly becoming the common tongue of the modern world. People today spend more money, time, and energy on music than on books, movies, and sports. The most popular cultural icons of our era are not statesmen or saints, but singers.

—Don Campbell

Today, more than at any other time in history, music pervades our lives. Most people—especially young people—listen to music several times a day. Thanks to technological advances and recent changes in the music industry, never before has so much music been so easily and inexpensively available, and never before have individuals had so much control over what music they listen to and under what conditions. And even when the listener is not in control of the music selection, or even actively listening to it, music permeates the environment all around us—we play it while we do housework, when we ride in the car, and while we eat, exercise, and socialize.¹



Why is music so ubiquitous? For the simple reason that it improves the quality of our lives. Numerous research studies have cataloged the many benefits that music confers upon listeners. But for now, let's just focus on the top three most common uses for music, which are universally practiced all over the world: (1) to regulate mood (to make us feel better); (2) to manipulate energy levels (to help us either energize or relax); and (3) to sharpen and maintain focus (to filter out distractions).

Mood

Mood management is one of the most basic of all human activities. We constantly make decisions, large and small, with the goal of improving our moods. Whether it's as simple as going for a walk or getting a snack out of the refrigerator, or as complex as planning a family vacation, our goal in a broad sense is always the same—to make ourselves feel good.

Research conducted through questionnaires, surveys, and psychotherapist interviews indicates only a handful of effective ways for reliably turning a bad mood into a good one. The top four approaches, as rated in the research,² are

1. Physical—getting some exercise
2. Musical—listening to our favorite music
3. Social—calling, talking to, or being with a friend or loved one
4. Intrapersonal—giving ourselves a pep talk or trying to figure out why we are in a bad mood in the first place

In one study, nearly 1,000 subjects, aged 12–29, were surveyed about their listening habits and their uses of music in their daily lives. Of the group,

- 20% were high-involved listeners—people to whom music was a central part of their lives;
- 74% were medium-involved listeners—people whose use of music was more casual and recreational; and
- 6% were low-involved listeners—people who chose to listen to music infrequently.

Those percentages in themselves show just how pervasive music is. But perhaps the most interesting finding of this research was that people from *all three* categories used music regularly to manage their moods and fend off boredom—even the low-involved group (Ter Bogt, Mulder, Raaijmakers, & Gabhainn, 2011).

Energy

While research shows that the number one use of music is as a mood enhancer, using music to adjust one's energy level runs a close second. According to one study, listening to music ranked equally with caffeine as the fifth best method of raising our energy levels when we are feeling tired. The top four are

- taking a nap,
- taking a shower or bath,
- going outside for some fresh air, and
- doing something to keep busy.

In fact, 41% of people report regularly using music to raise their energy levels (Thayer, Newman, & McClain, 1994). And music's power to

influence energy levels works in the other direction, as well. When we are stressed out or anxious, we often use music to calm and relax us.

Focus

Many people realize intuitively that a “pad” of sound in the immediate environment can be used to filter out distractions, allowing them to focus on the task at hand. Some people like to work with the television or radio on in the background to provide this sonic pad. But human voices can be highly distracting in themselves, so having the television or radio on doesn’t always work. Instead, many people use instrumental background music as their “distraction filter.”

The important point for teachers is that people don’t just listen to music for pleasure. Yes, this experience can be wonderful in itself. But music is also incredibly useful. We deliberately use it to lift us up when we’re feeling down, give us a shot of energy, calm us when we are frazzled or anxious, and help us focus and work. Our students already intuitively use music for all these purposes outside of school. Perhaps we could put music to similar use in our classrooms.

How Other Fields Use Music

How Business Uses Music to Manipulate Us

Researchers have been investigating the effects of music in a variety of business contexts for nearly a century, but the pace of this research has picked up greatly in the last thirty years. Today, the three main areas of research in this field look at the power of music to increase the

1. Productivity of workers
2. Purchasing behavior of consumers in retail settings
3. Effectiveness of advertising

Using music to boost productivity

One of the earliest examples of using music in manufacturing settings was the BBC radio program *Music While You Work*, which was launched in 1940 and ran for twenty-seven years. This half-hour program, which aired twice daily and featured popular, up-tempo dance music of the time, was meant especially for factory workers to listen to as they worked. *Music While You Work* was credited with

reducing the occurrence of accidents due to the increased alertness and improved mood of the workers. The British Minister of Labor even wrote that the program “made the hours pass more quickly and resulted in increased production (Le Roux, 2005).” And he was right. Research into the use of music in the workplace shows the following:

- ♪ The vast majority of workers find music to be pleasant and a positive mood enhancer.
- ♪ Workers rate themselves as feeling less tired in the presence of music than when no music is playing (Middleton, Fay, Kerr, and Amft, 1944).³
- ♪ Music reduces boredom and leads to increased productivity.
- ♪ There is some evidence that music leads to a decrease in errors in manufacturing.
- ♪ Using more arousing music during repetitive work leads to greater efficiency and economic benefits for the business.⁴

These findings are not lost on a business world desperate to increase productivity. Today, millions of people do their work to a carefully selected “soundtrack,” specifically designed to boost energy levels, improve focus, and increase accuracy.

Using music to increase retail sales

The retail and restaurant businesses are highly adept at using music to influence shoppers and patrons. Next time you enter an establishment with its own sound track, pay attention—there is nothing random about the music you’re hearing. Your friendly local barista did not just bring his favorite CD from home to pop in the stereo system. Considerable thought and even research has gone into the music you hear in your favorite mall, restaurant, bar, or coffee-house. Retail researchers have examined the effects of different aspects of background music, such as tempo, volume, familiarity, and liking, on a number of business metrics—with eye-opening results.

- ♪ **Tempo**—Research shows that slow tempo music makes shoppers⁵ and diners⁶ spend more time and money in the store or restaurant. On the other hand, faster tempo music makes bar patrons drink faster (and spend more money).⁷ Thus, retailers choose music to encourage the behavior that boosts profitability: 5-star restaurants use slower tempo music to

encourage their patrons to stay longer and spend more, while fast-food chains play fast tempo music to “turn over” as many customers as possible.

- ♪ **Volume**—People spend more money in a restaurant when the background music is played more softly (Lammers, 2003). On the other hand, bar patrons consume more drinks and drink them faster when the music is louder, possibly because you can’t talk to someone and drink at the same time (Gueguen, Jacob, Le Guellec, Morineau, and Lourel, 2008). Interestingly, the results of research on music volume in a supermarket setting are mixed, with louder music leading to shorter stays in the store, but no significant difference in sales (Smith & Curnow, 1966).
- ♪ **Liking** (pleasantness) and **arousal**—When music is both pleasant and mildly arousing, customers tend to approach business personnel more readily and interact in a more friendly manner (Dube, Chebat, & Morin, 1995). Customers also rate the entire buying experience—service quality and merchandise quality—more highly in the presence of background music that they find pleasurable (Sweeney & Wyber, 2002).
- ♪ **Fit**—Music has a more powerful retail effect when it matches customers’ perceptions of the business. For example, several studies have shown that, for some businesses, playing classical music in the background increases profits. One such experiment, conducted in a wine store, found that while customers didn’t buy *more* wine when classical music was playing, they did buy more *expensive* wine. The hypothesis is that patrons viewed the store as being “classier” because of the classical music playing in the background, and that since classier people (supposedly) visit classier stores and buy more expensive products, the store’s patrons followed suit (Areni & Kim, 1993). If you have trouble believing in the manipulative power of classical music, this same finding has been replicated in other settings—customers in a British restaurant were shown to consistently spend more with classical music playing in the background, as were college students in a student cafeteria.⁸ Of course, in other retail settings, the best musical fit might be pop music, or country music, or . . . whatever fits the customer profile best.⁹ Rest assured, business owners worldwide make conscious decisions about what music to play in their stores because they know that the right music works to increase sales.

Retailers—along with medical clinics and sporting venues—also use music to lift the mood of their patrons. Studies show that people will wait longer when listening to music than in silence, and that they don't mind the wait so much and have better feelings toward the business if they enjoy the music being played (even when it makes the wait seem longer).¹⁰ This is why there is almost always music playing while you wait for your car to be fixed, in the doctor's office, or in line to have a prescription filled. This is why every sporting venue has energizing music playing (either over the loudspeakers or performed by a live band) at every opportunity—as you enter the venue, at half-time, during time outs—to lift the mood and make the experience more enjoyable, so patrons return.

Using music to make advertising more effective

Research shows that a good, catchy jingle embeds a business slogan in our heads very effectively for branding purposes (though you can only embed so much information in a jingle).¹¹ Similarly, the background music used in commercials creates positive associations with a brand, increasing sales. Not surprisingly, this effect increases the more attention-getting the music, the more the listener likes the music, and the better the music fits the product.¹² But music in advertising can be tricky, as well. Research has found that when consumers have to think hard about product features to make a purchasing decision, attention-getting music can be distracting (Park & Young, 1986). Likewise, appealing, up-tempo background music, when played behind educational television programming, tends to distract viewers' attention from the content of the program and impair recall (Wakshlag, Reitz, & Zillman, 1982).

Music in the Health Care Field

Each illness has a musical solution. The shorter and more complete the solution, the greater the musical talent of the physician.

—Novalis

In his book *Awakenings*, physician and neurologist Oliver Sacks (1973) writes that “the power of music to integrate and cure . . . is quite fundamental (p. 60). [It is the] profoundest nonchemical medication.” In the United States, music therapy began as far back as

the 1800s, first in the Perkins School for the Blind in South Boston, and later in hospitals treating physical and mental disabilities and emotional disturbances, especially depression and mania. Today, across the world, licensed music therapists are frequently included as key members of teams of medical professionals, most commonly using music to reduce stress in patients (Heller, 1987).

Considerable research supports the anxiolytic (stress reducing) benefits of certain kinds of music. For example, in one study by Knight and Rickard (2001), college undergraduates were given a stress-inducing task (a short time to prepare an oral presentation on a challenging topic). Subjects' heart rate, blood pressure, and levels of cortisol (a stress hormone) were taken prior to being told of the task. The experimental group then listened to calming music (Pachelbel's Canon in D Major) as they worked, while the control group worked in silence. After the preparation period, physiological measures were taken again (the subjects didn't actually have to give the presentations—even researchers have a heart!). The control (no music) group reported increased subjective stress levels, and physiological measures showed increased heart rate and blood pressure due to the stressful task. The group listening to the music, however, showed *no stress-induced effects* of the task! Relaxing music has also been found to work well when used in combination with other stress-reduction techniques such as biofeedback and muscle-relaxation training.¹³

Music is also highly effective in reducing stress prior to, during, and after surgery. A number of studies have shown that with both children and adult patients, using music, either by itself or in combination with other stress-reduction methods, can reduce anxiety about upcoming surgical procedures.¹⁴ In addition, patients who listened to music during surgery where a nongeneral anesthetic was used reported that the music eased their anxiety, acted as an effective distracter, and increased their threshold for pain (Stevens, 1990). And for surgical patients undergoing general anesthesia, those given postoperative music therapy reported less anxiety and pain and required less pain medication (Nilsson, Unosson, & Rawal, 2005).

Research also supports the effectiveness of using music in obstetrics. Women report much more satisfaction with their deliveries when music is used as part of a predelivery routine during the third trimester of pregnancy and then subsequently used during delivery to cue breathing, assist in relaxation between contractions, and focus attention away from discomfort. Women who followed the music therapy program prior to and during their deliveries also reported significantly less pain than those delivering without music.¹⁵

In addition to its use for stress reduction, in surgery, and during childbirth, music's other research-supported health applications include the following:

- **Exercise**—Listening to music while exercising has been shown to significantly increase the amount of time spent working out.¹⁶
- **Physical therapy**—Matching muscle movements to a rhythm has been shown to lead to a more efficient recruitment of motor units and smoother movements (Thaut, Schleiffers, & Davis, 1991).
- **Addiction**—Patients recovering from chemical or alcohol dependency reported a decrease in chronic stress following a series of treatment sessions combining music with guided imagery (Hammer, 1996).
- **Sleep**—A program of music, progressive muscle relaxation, and guided imagery was found to significantly decrease the amplitude of circadian rhythms, allowing a group of nurses to more quickly adjust their sleep patterns when switching from daytime work shifts to night shifts, and vice versa (Rider, Floyd, & Kirkpatrick, 1985). Likewise, listening to soft music just prior to bedtime was shown to provide a variety of sleep benefits for elderly people, including better sleep quality, longer sleep duration, and less sleep disturbance, and the benefits of listening were shown to increase over time (Lai & Good, 2005).
- **ICU support**—Nearly 60% of intensive care patients, when exposed to music therapy, demonstrated lowered blood pressure, heart rate, and respiration, indicating less stress.¹⁷

The bottom line is that *business people and clinicians pay attention to the research*. If some use of music (or any other atmospheric variable) can help business owners to influence customers to purchase more of their products, they are going to use it. They understand the power music has to affect us, and they aren't shy about using it to manipulate our feelings and direct our decision making. Similarly, while physicians are focused on more altruistic outcomes, they nevertheless also pay attention to research and aren't afraid to try new techniques when warranted. After all, in the final analysis, both business and health care are driven by a "results orientation"—what works (for profit in business, for quality of life in health care) is what counts, and pretty much all that counts. Perhaps it's time for educators to follow suit.

Our Turn Now—Using Music as a Powerful Teaching Tool

Despite the pervasive nature of music in our modern society, and its extensive use in the fields of business and health care, music has yet to be fully harnessed in education. It almost seems as if there is some unwritten rule prohibiting music on school property, especially with older students. This is a sad situation, because there are so many ways music can be used effectively in the classroom.

Please realize this is not the fault of teachers. There are any number of reasons why schools are not filled with music, starting with the inertia of tradition. Using music in the classroom has never become a mainstream, accepted educational practice, and we know how hard it is to be the first teacher in a school to break with tradition. In addition, music is often excluded from the teacher education curriculum. While teaching methods courses for elementary level teachers often include at least some techniques for using music in the classroom (to teach some content and for management purposes, mainly), secondary methods courses rarely even mention the topic. And we can't ignore the role of administration. A teacher may wish to use more music in his or her classroom, but if the school administrators are not supportive, the teacher is not likely to give it a try.

Despite these challenges, we believe the potential benefits of using music will make overcoming these difficulties worthwhile. Teachers who learn to use music well find it a powerful force for

- **Mood Management**—As teachers, we also know how challenging it is to teach a room full of students when they are in a bad mood. Chapter 2 shows you how and when to use music to lift the mood of your students and get them into a better frame of mind for learning.
- **Energy Management**—You know how hard it can be to teach when your students are bouncing off the walls with excess energy, or conversely, when they are all dragging around the room with no energy at all. In either situation, music is a wonderful tool for manipulating student energy. Chapter 3 explains how to use calming music to bring your students' energy level down so they can focus on their work. Chapter 4 shows you how to use energizing, "pump-up" music to raise student energy when needed.
- **Establishing and Maintaining Focus**—One of the bigger challenges all teachers face is getting and keeping students "on

task.” Once again, music is an amazing tool for achieving this goal. Chapter 5 explains how to use background music effectively when students are doing individual seatwork and Chapter 6 shows you how to use music behind small group activities to help students focus on their work.

- **Increasing Learning**—One of the most powerful uses of music is as a mnemonic (memory) aid. When curricular content is embedded in song lyrics, students learn it more quickly and retain it better. Chapter 7 demonstrates a variety of ways you can use music with embedded content to supercharge learning in your classroom.
- **Classroom Management**—Music can be used as a cue for students to do certain tasks, to manipulate the speed of transitions, and as a tool for modulating classroom noise. You can also use it to add an element of fun and engagement to simple classroom chores, such as passing out papers and cleaning up after activities. Chapter 8 describes a number of ways you can use music to make your classroom run smoothly throughout the day.

If this all sounds a bit daunting, don't worry. You can start with a single use of music and take it nice and slow. Once you are comfortable with that use, you can add another. There's no timetable, and no particular order in which you need to read the chapters. Feel free to dip into the book at any point; each chapter can be read as a stand-alone piece. In addition, Chapter 9 offers you a number of tips about equipment and policies you might find helpful for getting started. No matter how you approach the task, this book offers you guidance and resources to make the trip easier and more enjoyable.

Notes

1. Juslin and Laukka (2004) used a questionnaire approach to assess how 141 music listeners between the ages of seventeen and seventy-four years used music in their everyday lives. The researchers found that 64% of the subjects listened to music “several times a day” and that over 80% listened to music at least once a day. The data also showed that nearly 50% of the time, subjects were engaged with other activities, with music comprising one component of the environment (217–238).
2. Thayer, Newman, and McClain (1994) conducted four studies to evaluate the success of different behaviors used by people

to regulate their moods, energy levels, and stress. They found that exercise was the most effective strategy for elevating mood, followed closely by listening to music, which ranked higher than strategies such as talking to or being with others or taking a nap (910–925).

3. Middleton, Fay, Kerr, and Amft (1944) conducted one of the earliest studies on the use of music in a manufacturing setting. They found that both male and female workers reported being less tired and in a better mood with music in the environment than with no music. They also found that workers were more energized by popular vocal music than by waltz music (299–318).
4. Fox and Embrey (1972) report that, in repetitive work situations, research has found that background music raises efficiency even when the music has to compete with machine noise. The results support the contention that economic benefits can accrue to business from using music in this fashion (202–205).
5. Milliman (1982) found that the tempo of background music significantly influenced buying behavior. The supermarket in which this study was conducted had an average increase of 38.2% in sales volume when slow tempo music was played (86–91). This general conclusion may not hold up in all cases, however, as research by Eroglu, Machleit, and Chebat (2005) has found that the right tempo of background music depends upon how crowded the store is. When a store was crowded, shoppers were found to enjoy the shopping experience more if slower tempo music was playing in the background; alternatively, in less crowded conditions, they enjoyed the shopping experience more with faster tempo background music (577–589).
6. Milliman (1986) found that restaurant patrons stayed longer with slower tempo background music playing, and while they ate about the same amount of food, they consumed more alcoholic beverages (286–289). Caldwell and Hibbert (1999) also found that diners spent more time dining with slower tempo music, and that they spent more money on both food and drink (58–62).
7. McElrea and Standing (1992) tested how much bar patrons drank with different tempos of background music playing.

When faster tempo music was playing (132 beats per minute), patrons drank significantly faster (and more) than with slower tempo music playing (54 beats per minute) (362).

8. North, Shilcock, and Hargreaves (2003) found that restaurant patrons spent more money on starters, coffee, and food with classical background music as opposed to pop music or no music (712–718). North and Hargreaves (1998) also conducted a study in a college cafeteria where they played either classical, easy listening, pop music, or no music in the background while students dined. Subsequent interviews showed that diners felt prepared to spend more money with classical music playing than in the other conditions. Both classical music and pop music led to higher spending than easy listening or no music (2254–2273).
9. Yalch and Spangenberg (1990) examined the effect of different types of music on the shopping behaviors of clothing store patrons. They concluded that trying to satisfy customers' preferences may not always be the optimal approach. Instead, they suggest that music should be varied across different areas of the store that appeal to different-aged customers (55–63).
10. North and Hargreaves (1999a) examined subjects' willingness to wait while listening to music at one of three different levels of complexity, or in silence. They found that the complexity of the music didn't matter to wait time, but that subjects were more willing to wait with music (of any level of complexity) than without it (136–149). Hui, Dube, and Chebat (1997) also found that, no matter the valence of the background music played, people preferred to wait with music rather than without. People did prefer positively valenced music, however, and exhibited more approach behaviors toward the business with positively valenced music playing (87–104). One interesting aspect of this study was that it supported a previous finding by Kellaris and Kent (1992) that listening to music one likes actually makes wait time seem longer. Most people would assume this to be a negative thing, but the subjects in the study did not mind the seemingly extra wait because it was made more enjoyable by the music (365–376).
11. Tom (1990) compared the use of hit music, parodies of hit music, and originally scored music for product advertisements and found that original music was more effective for memory

purposes than either hit music or parodies of hit music. Parodies of hit music were found to be more effective than hit music (49–53). Yalch (1991) found that music enhanced memory for and retrieval of advertising slogans when the slogans were put to music (a jingle or song) as compared with slogans that were simply shown or spoken (268–275).

12. Kellaris, Cox, and Cox (1993) examined the effect of attention-getting background music that either supported (fit) the intended message of the advertisement or did not support the intended message. As one might expect, they found that message-congruent music had a more positive effect on ad recognition and recall than did message-incongruent music (114–125). Gorn (1982) found that people were more likely to choose to buy a product when liked music was played in the background than they were when disliked music was played (94–101).
13. Scartelli (1984) compared the effects of EMG biofeedback only, relaxing music only, and EMG biofeedback combined with relaxing music on muscle relaxation. He found that, while all three experimental conditions led to some level of relaxation, and while there was not a statistically significant difference between the results, the condition that led to the highest level of relaxation was the combined biofeedback/music condition (67–78).
14. Miluk-Kolasa, Obminski, Stupnicki, and Golec (1994) investigated the impact of music on the physiological responses of patients prior to surgery. One group of patients was given information about their upcoming surgery without musical intervention. The other group listened to one hour of self-selected music immediately after being given the information. Patients not exposed to music had a 50% rise in cortisol, and their levels of stress hormones remained elevated after an hour. Those patients who listened to music demonstrated a marked reduction in cortisol, with levels returning to near-baseline within an hour (118–120). Robb, Nichols, Rutan, Bishop, and Parker (1995) examined the effect of music-assisted relaxation interventions on pediatric burn patients prior to reconstructive surgery. Subjects in the experimental group listened to relaxing music and focused on deep breathing, muscle relaxation, and imagery. The control group received standard preoperative interventions. Study

results showed a significant decrease in anxiety in the experimental group (2–21). Froehlich (1984) also found that music therapy was more effective than play therapy in reducing preoperative stress in school-age patients, 2–15, and Chetta (1981) found that a course of music therapy administered to patients aged three to eight just prior to preoperative medication led to less anxiety leading up to surgery (74–87).

15. Clark, McCorkle, and Williams (1981) found that women who participated in music therapy sessions during the last trimester of their pregnancies and then listened to the music during delivery were more satisfied with the outcome of their deliveries than women who did not participate in the program. It was also found that the more the women in the experimental group practiced with the music at home prior to delivery, the more satisfied they were with the results (88–100). Hanser, Larson, and O'Connell (1983) found that women who participated in a music therapy program prior to and during delivery found the music to be an effective diversion and, as a result, reported less pain during delivery (50–58).
16. Beckett (1990) had college psychology students exercise either to no music or while listening to either continuous music or intermittent music. She found that subjects walked significantly farther during either music condition than in the no music condition (126–136).
17. Chan, Chung, Chung, and Lee (2008) investigated the use of music therapy to reduce anxiety in patients in an ICU setting. They found interesting differences in the effectiveness of the therapy depending upon a variety of demographic factors. Those who responded well to the therapy (lowered blood pressure, heart rate, and respiration) made up 58.4% of all patients; this group was labeled the "high therapeutic effects of music" group, which consisted of more females and older people. This group also had, on average, more experience with using a ventilator. The other group (41.6%) was labeled the "low therapeutic effects of music" group; this group consisted of more males, more young people, and more highly educated people (1250–1257).

Interlude

About Chapters 2 Through 8

The next seven chapters cover different types of music to consider using during specific parts of your teaching day (see table below). If you're looking at the table and thinking we're suggesting you use music for most of your teaching day—you'd be right.

We believe that, other than during direct instruction (when music would be distracting); every moment in your classroom could be enhanced by having the right sound track. Having said this, please understand that we would not expect you to begin using all of the types of music suggested in this book right away, especially if you have been using little or no music in your classroom. Start slowly and build up your comfort level over time.

Transitions	Direct Instruction	Student Processing
Entering and exiting the classroom, moving between activities	Lecture, teacher modeling, teacher-led whole class discussions	Individual activities, small group discussions, partner or team work, recall strategies
Feel-good music (Ch. 2) Calming music (Ch. 3) Pump-up music (Ch. 4) Management music (Ch. 8)	No music	Background music (Ch. 5) Music behind activities (Ch. 6) Music to teach content (Ch. 7)

Be aware that each of these types of music have different characteristics and need to be used in particular ways. For example, with calming music, you have to be careful not to put your students to sleep; whereas with pump-up music, you have to be careful not to get them overstimulated. The following seven chapters are structured to help you understand why and how to use each type. They all include sections on

- What it is
- Why it works
- How to use it
- What to avoid
- How to get started
- Inside a classroom (case studies from teachers)
- Our Top 40 (suggested tracks to be used in the classroom)