

Student Reading Worksheets: *Teaching Kids to Sing, 2nd edition* (Phillips)

Bracket information [] is additional commentary discussed in class.

PART I: THE YOUNG SINGER

Singing is a learned behavior. – Helen Kemp

Chapter 1: Vocal Pedagogy for Young Singers

p. 3. Singing is an expressive means of communication that _____ both spoken and written words. [*Ineffable*] . . . it is an end in itself and a means to many ends. [*Means vs. Ends*]

It is not a “tin ear,” but rather a lack of psychomotor _____ that keeps many children from finding their voices.

p. 4. Block quote: “. . . there are many benefits to teaching children to sing. . . .” [*advantage of “group lessons” (choral experience) vs. “private instruction” at young ages.*]

Just as children involved in sports activities play in abbreviated games, so must the voices of children and adolescents be protected from _____ .
_____ is the key – young voices must be protected from long periods of singing.

Why Sing? Benefits include personal, social, and educational outcomes. [*Be familiar and internalize bulleted important outcomes, pp. 4-5.*]

p. 5. The first of the National Standards . . . all children should be able to _____, alone and with others, a _____ of music.

For almost 100 years (1830s to 1930s) singing was taught in America’s schools using systematic instruction based on the Italian _____ method. [*Describe the pros and cons of this approach vs. the song-approach.*]

p. 6. The song-approach literature neglected the technical areas of vocal quality, registers, breath management, dynamic levels, duration, and range; the mastery of singing technique was not presented as a _____.

The _____ movement, based upon the model of **F. Melius Christiansen**, was gaining popularity in the nation’s high school at the very time the song approach was becoming popular at the elementary level. . . . The emphasis of this movement was on _____ and the limited _____ produced a polished perfection heretofore unknown among high school singers.

In _____, the *Sputnik* launch shocked America out of a false sense of security with regard to its technological edge and its educational system. . . led to calls for the complete restructuring of American education, including the _____ curriculum. [*This was the inspiration for **Bennett Reimer**’s A Philosophy of Music Education (as Aesthetic Education), which had a profound impact on our field. It still influences many of us in meaningful ways today, which is why we’ve covered it in ACT.*]

p. 7. Zoltan Kodály, Carl Orff and Emile Jacques-Dalcroze [*are other approaches with which I’m sure you’re familiar. If not, start researching the ones you don’t know. You must have a working knowledge of these primary approaches to music education. You should also consider exploring the Comprehensive Musicianship Program (CMP) approach. Consider eclecticism, but take each approach seriously if you do so: use them wisely, mindfully.*]

Fortunately, _____ for children and adolescents began to reappear in the 1980s . . . [and the educational pendulum always swings back and forth!]

Systematic vocal instruction in the U. S. has a history dating from the early “ _____ movement of the 18th century. . . [the] use of itinerant _____ to teach the rudiments of voice and music reading to both children and adults, was supplanted in the 19th century by _____ within the ever-growing public-school movement.

[William Billings (1746-1800) is a name you should be very familiar with, along with as much of his music as possible. This is truly the nation’s first homegrown “classical” America’s, and it’s great stuff! As we’ll learn later, early American Moravian music, like that composed in Lititz, PA by my main research interest, Johannes Herbst, is also quite significant. The difference: Billings (and his contemporaries) were American-born, while the Moravians were new immigrants to the country and brought their European tradition with them.]

p. 8. America’s first public school music teacher, _____ (1792-1872), was an advocate of systematic vocal instruction for children. Mason helped to form the Boston Academy of Music in 1832, for the instruction of both music teachers and children. Mason is seen as an early advocate of systematic vocal instruction in which _____ serves as the foundation for the singing of songs. *[Be very familiar with this extremely important historical figure in American music education.]*

p. 9. Read carefully the paragraph that begins “Prominent late 19th century authors were . . .” and ends with “Howard’s influence on child vocal pedagogy remained strong until the 1930s.” *[This information is helpful in learning that certain vocal pedagogy issues are timeless and universal.]*

pp. 10 -11. *[Interesting historical information and helpful illustrations that are still useful today! Many of these topics will be covered as we learn about the adolescent changing voice and other issues throughout the semester. The basics of good singing (and discussions about to how to teach it) have been around forever . . . continue to be explored today (often in similar ways) . . . and undoubtedly will persist in the future. “There is nothing new under the sun.”]*

p. 12. School music classes in the late 19th and early 20th centuries placed much emphasis on learning to _____, in addition to learning to _____. Lowell Mason advocated the use of the seven-syllable, seven-note _____ - _____ system, and it became the basic approach in the urban centers of the northern U. S.

By the 1930s, many music educators, swayed by the philosophical writings of _____ on aesthetic education, turned against formal instruction in the vocal classroom.

The paragraph that begins “The shift to the song approach. . .” and ends with “ The evidence that many adults today cannot, or will not, sing suggests that many did not _____ to sing” discusses skill/drill vs. art/creativity/aesthetic approaches. *[An important aside: As you might expect, I think Phillips is a bit unfair to the aesthetic movement here. As an advocate for the aesthetic nature of music education, and having studied face-to-face with the “founder” of this philosophy in its modern incarnation I can tell you that Reimer believed vehemently in the power of performance and skill building to create excellent school ensembles. He simply believed that our American system of public school education already does a fine job with covering this aspect of music education. Attend an ACDA or PMEA conference and you’ll see that this is true. Reimer justly focused on the 85% of students who are not typically involved in elective school performing ensembles. He chose to devise a philosophy that addressed the totality of what the musical can and should be, where listening to music (and also composing) could/should be taught as another way to reach non-performers. This goes against (and ruffles the feathers of) those who believe that performance is the best (and only?) way to access music. Look how many people simply listen to music. How can we reach these folks and teach them to have aesthetic experiences? Reimer felt we could teach people to listen (and compose) as a means to accessing*

aesthetic experiences. Ultimately, if we can't (and don't want to) teach music to 100% of the school population, how can we say that music is unique and essential in American public school curricula?]

p. 13. Advocates of Systematic Vocal Instruction. *[What did they believe? What did they teach? In general, breathing as the basis of good choral tone; balance of art and science; teach breathing through the emotional meaning of the lyrics; embrace BOTH vocal exercises and the song approach. Yea!!! The answer is **BALANCE**.]*

p. 14-16. More names you should know: Ruth Krehbiel Jacobs (Choristers Guild), **Helen Kemp, Jean Ashworth Bartle, Mary Goetze, Doreen Rao, [Henry Leck,** and our textbook author, **Kenneth Phillips]**. *These names are especially noteworthy in relation to children's choirs. Note also the function of ACDA in lifting up choral excellence in this area and bringing quality and excellence to what young students are capable of achieving artistically. The finest choirs of young people will definitely thrill and amaze you at Regional and National ACDA conferences. Please join ACDA and attend these conferences to be inspired and see what the potential and possibilities are with singers from the very young to very old. Unlimited.]*

p. 16-17. Phillips introduces his method in this text, and how it's different than the first edition. Appreciate his emphasis on "energizing" everything. *[Very systematic and sensible approach with lots of good advice here.]*

p. 17. When, Who, and How Long? ... systematic vocal instruction should begin about age _____ (second grade), preferably in a _____ setting.

p. 18. It is important that systematic vocal instruction consume no more than _____ to _____ minutes of a 30-minute elementary music class. Up to _____ minutes is acceptable in classes lasting forty to forty-five minutes. At the high school level, approximately _____ percent of the choral rehearsal time is adequate for vocal instruction. A competent vocal instructor is aware of _____ limits for child and adolescent singers.

At no time should the entire class be given to systematic vocal instruction . . . The goal is to _____.

One of the dangers of the elementary choral program is that it may foster _____ divisions among children. . . . Or worse, children who do not sing accurately are told to be " _____ " or not to sing at all. *[Read more about select choirs. What are the pros and cons. What is a training choir?]*

p. 19. Lowell Mason demonstrated in _____ that all children were capable of singing. What was true then is true today: singing is a _____ . Let's get back to basics – let's teach everyone to sing!

Remember (and explore) the useful References and Bibliography as part of you "Tools of the Trade" final project.

Chapter 2: The Psychomotor Process

p. 24. The vocal instrument is a wonderfully complex mechanism. The _____, _____, and _____ properties combine to produce an incredible result – singing.

This chapter discusses various aspects of _____ perception, _____ memory, pitch _____, and motor coordination that are involved in the psychomotor process.

Psychomotor Domain (learning for skills development) = Motor activity directly proceeding from Mental responses.

Psychomotor process for teaching:

- (1) Teacher provides _____ or stimulus
- (2) Student _____ and decodes the model
- (3) Student _____ the model
- (4) Student _____ feedback regarding his/her effort.

p. 25. Seven Levels of Taxonomy:

1. Perception:
2. Set:
3. Guided response:
4. Mechanism:
5. Complex overt response:
6. Adaptation:
7. Origination:

Subsets:

- 2.1. Mental set:
- 2.2. Physical set:
- 2.3. Emotional set:

... overcome this macho attitude by using male role models.

Accurate pitch production is dependent upon both psychological and physiological processes.

Three psychological factors:

1. _____ (hearing and decoding pitch)
2. _____ (remembering pitch)
3. _____ (recognizing differences among pitch patterns and assigning labels using accepted terminology, e.g., ascending, descending, major scale, minor scale)

p. 26. ...most inaccurate singing is more the result of problems with motor _____ than problems with hearing.

AURAL ACCUITY

Pitch Perception. Problems of poor pitch perception can stem from numerous factors, including _____ to pitch, _____ problems, and _____ teaching modes.

Feedback problems: lack of proper feedback leads to inattention and inability to decode pitch. Use aural, visual, and kinesthetic forms of feedback to aid pitch perception and production.

Use ear cupping and call (teacher) and response (student) tonal patterns (3-4 pitches) in rote imitation. By third grade, pitch accuracy no longer seems to be affected by group singing.

The importance of _____ (the physical feeling of sound sensation or production) to _____ (pitch discrimination) is related by **Betty Bertaux** [*another name to recognize for children's choirs*].

p. 28. Visual feedback has been found to be another aid to aural acuity and pitch discrimination. Pictures of high and low objects, or “ _____,” drawn on a chalkboard or whiteboard helps some students. . . .computers can also help inaccurate singers.

Teaching Mode. When teachers are enthusiastic, students are apt to be more focused. Students can be engaged directly in the learning process through activities in which they make _____ and _____ about the music being studied. Music learning should be a _____ - _____ process.

p. 29. Three learning modalities: _____, _____, _____. Individuals usually learn better in one of these modalities (their “ _____” modality). _____ these modalities of teaching and learning is often the best strategy for reaching all students in a classroom.

Vocal _____ is another important teaching modality. Children are more likely to perceive pitch accurately if the model they hear is an accurate representation of what they are to produce, and is presented in their _____.

Read block quote. . . the male model presenting in the “ _____” (male alto) is better than the male model in the natural voice.

p. 30. Students respond more accurately to the _____ model. . . .“the presence of vibrato in the voice of the teacher should be reserved for _____ and should be kept out of the elementary classroom.

“ _____” is when less vibrato is warranted in the voice. . . . It is recommended that teachers do NOT sing with students. [*Think of it like a conversation, where you avoid talking over someone. Let the children's voices “speak” while you “listen,” and vice versa.*]

Tonal Memory. Students must be able to remember the tones they hear. Tonal memory is affected by the students' age and the amount of material to be remembered at a given time. When learning a song, children benefit from _____. Most songs are taught better _____ -- _____. [*Or we might say Experience (Synthesis) – Analysis – Experience (Synthesis). This is perfect for Perception X Response, with 2/3 response!*]

PITCH DISCRIMINATION

p. 31. _____ is widely known in music education as a researcher, teacher, author, and lecturer. He may be best known as author of six highly regarded music aptitude tests, including *Primary Measures of Music Audiation* (1979), and *Intermediate Measures of Music Audiation* (1982). Followed in the steps of Carl Seashore (renowned music psychologist) in researching how people think musically, and the nature of developmental and stabilized music aptitudes. Main categories: discrimination and inference.

p. 32. Gordon coined the word _____ to represent the psychological process of discriminating among musical stimuli. Five levels of discrimination:

- (1) Aural/oral –
- (2) Verbal association –
- (3) Partial synthesis –
- (4) Symbolic association –
- (5) Composite synthesis –

Children learn to audiate in relation to _____, or _____.

Tin Ear? As children _____, so does their ability to _____ and _____ . . . the more _____ experience, the _____ the audiation skills.

Inaccurate singers are not “_____” or lacking in audiation skills. . . the experimental group receiving _____ training significantly improved in _____ and _____ over the control group.

Energize the Ear. Establishing the concept of “_____ - _____” is key to Gordon’s aptitude testing.

p. 33. Part of the process for teaching pitch discrimination is to cultivate children’s ability to sing “_____.” Learning to “_____” is not _____ something children automatically do. Phillips’ method asks students to _____ the beginning of the pitch of a song (sounded by the teacher) before it is sung. Likewise, students should practice beginning a song _____ the first pitch being sounded. Gordon’s discrimination elements lead to students comprehending the _____ of _____ in terms of _____ and _____.

Motor Coordination. Second part of the psychomotor process for singing is _____, or _____. The _____ involves _____ of the body (instrument), _____ (support and control), _____ (pitch and registers), _____ (rich resonance), and _____ (clear and precise).

Pitch is the product of two _____ or _____ actions: (1) _____ (vibration) of the vocal folds, and (2) the _____ of the pressurized air column. Most inaccurate singing among children is caused by _____ to experience singing in the upper (CT dominant) vocal register [*we call this “head tone”*] and/or failure to use the _____ techniques that provide the necessary breath pressure to sustain pitch accurately.

Vocal-Fold and Register Adjustments.

Vocal fold adjustments necessary to produce a wide range of pitches are basically _____ -- the pitch-adjusting muscles respond automatically to the _____ of pitch and adjust accordingly. However, a child must experience _____ and _____ a variety of these adjustments to build confidence in automatically producing accurate pitch.

Singing in the upper, or “head,” voice requires the _____ and _____ of the vocal folds. Pitches produced like this are part of the CT (*cricothyroid*) register. If a child does not experience this sensation, matching pitch in the upper range is difficult.

p. 34. Children sing more naturally in the _____, TA (*thyroarytenoid*), or _____ register because it is what they experience in speaking. Rather than carry the _____ voice higher and higher, children are encouraged to _____ TA and CT production into a balanced middle register between _____ and one octave above. [*Women and girls are taught to do the same thing: develop the “mixed middle voice,” which combines head and chest registers to create an even sound through their entire range.*]

Breath Management.

Essentially, the _____ has to provide the correct breath pressure if accurate pitch is to be produced. Learning to balance the _____ of the _____ with the _____ of the energized air column is one of the basic requirements for singing. [*air flow vs. air pressure*] Children tend to breathe in the upper chest (_____), thus compensating for lack of _____ by using too much _____ and _____ at the vocal fold level. Such “_____” production results in _____, lack of _____ and _____, and _____ to the vocal folds.

The breathing process is _____, that is, one can breathe most easily with the _____ (between the ribs), which tends to produce a _____ breath, or with the _____, which results in a deeper, fuller breath.

The first mode, _____ or _____ breathing, is used for a fast inhalation-exhalation cycle, such as needed for _____ or other strenuous physical activities. The second mode, _____ -- _____ -- _____ breathing, permits greater control over the breathing process and aids pitch production through _____ of an _____ air column. Young singers need to understand the _____ nature of breathing.

Older children often _____ respond quickly to instruction in proper breathing.

p. 35. INACCURATE SINGING.

Many terms are used to label students who sing off pitch: _____, monotones, out-of-tune singers, nonsingers, poor-pitch singers, droners, untuned singers, conversational singers, defective singers, backward singers, problem singers, and tone-deaf, tune-deaf, pitch deficient, singing-impaired, blue jay, submarine, and inaccurate singers. The term _____ is, perhaps, the most accurate of all.

Causes of Inaccurate Singing. Causes generally fall into four categories:

- (1) _____, or lack of exposure to music;
- (2) _____, including retarded maturation, physical defects, diseases;
- (3) _____, such as poor pitch discrimination, poor tonal memory, lack of confidence;
- (4) _____ due to poor breath management, lack of kinesthetic awareness in the vocal mechanism, inability to shift to the upper register, and straining.

The influence of the _____ also is known as a key factor.

There is a strong relationship between the singing of prekindergarten children and their _____ environments.

p. 36. There are significant _____ in singing accuracy for children from homes where music was emphasized. . . . 40 percent of the variance in musical aptitude could be attributed to _____.

[Block quote]. . . Preschool children from musically disadvantaged homes can develop neglected musical skills through planned _____ and _____. [*Think Swan!*]

An important period of musical growth for the child is between the ages of _____ months and _____ years.

p. 37. Singing development should be considered as a normal feature of children's musical _____ with the world around them. All children have musical _____.

Remediation for Inaccurate Singing. Remedial help for inaccurate singing includes the psychomotor process and generally falls into three categories:

- (1) Pitch _____ and/or _____,
- (2) Additional _____ in the singing of songs and exercises, and
- (3) Instruction in _____.

Pitch Perception and/or Discrimination Activities. Using _____ or _____ feedback. Presentation and order of pitches to be matched seems to influence singing accuracy. _____, _____ tonal patterns in a variety of _____ are better for pitch matching than _____.

Pitching tonal patterns high enough to _____ the _____ register helps students find their singing voices. (use pitches between a1 and c2) [See pitch labeling key on p. xviii.] A simple reminder to "_____ " also helps young children to remember to use the _____ register.

pp. 37-38. Singing correctly requires that the students _____ accurately. Students need a time for _____ before giving a response [they need time to perceive before responding] - that is, singing on the _____ before singing on the _____. Also need to develop the ability to compare tonal patterns for "_____" or "_____." Having students _____ their _____ (from behind) with their hands also helps them to hear and attend to the pitch model and their own voices. [improves coordination of hearing and producing pitches]

Have students analyze their own responses. [internal looping] Discussion is central to the experience; there is no _____ or _____ way to relate _____. This form of _____ originates with the student.

The teacher can enhance the psychological process needed for accurate singing:

- (1) provide a _____ (tonal pattern) within student's vocal range,
- (2) require a time for "_____" singing,
- (3) request a singing _____ using a _____ syllable, [vi] or [du]
- (4) provide for _____, first from the student, then from the teacher, and
- (5) discuss the _____ sensation of the vocal response with the student.

In this last step, the student is led to distinguish between CT (_____) and TA (_____) registers. _____ reinforcement is extremely important, and teachers must shape the _____ to the desired goal.

Provide opportunities for children to sing _____, after a good model, to _____ their own voices and help them to _____ between correct and incorrect responses. [Again, think of it as a conversation: students need time to partake in the musical exchange. Using solo models also helps with focus and attention of the entire group, which concurrently facilitates effective classroom management in the most productive, musical way! This also improves their confidence.]

Additional Song Experience. The singing of songs as a remediation technique for inaccurate singing has been found to have little or no value. _____ and _____ could help inaccurate singers. _____, in one study, is reported as the "_____." [Notice how Phillips uses research to back up every claim; it's not just a hunch.]

Motor Coordination. Teaching children to breathe from the _____ had a positive effect on their singing accuracy. *[Yes, good vocal technique improves pitch accuracy!]*

Inaccurate singing results from the failure to _____ properly the _____ pitch-production process. As the breath is the _____ of the vibratory cycle of the vocal folds, its _____ and _____ are basic to accurate singing.

pp. 38-39. Lack of breath-support coordination can produce either of two conditions: (1) _____, _____ singing (result of laryngeal mechanism compensating for lack of breath *[flow/]* pressure or (2) diffused, inaccurate singing as a result of _____ breath pressure and lack of compensation by the laryngeal mechanism *[flat, breathy production]*. Children who sing with a pressed, throaty production never sing with a _____ or _____ tone.

Correct posture and breath management are the foundational elements of proper motor coordination, but complete vocal coordination involves _____ than just breathing. The student must learn to apply breath to both the _____ and _____ voices. _____, _____, _____, and chanting texts all serve as a means of establishing the various pitch levels of the voice proper support and projection. *[We consider these as Phonation activities with which to explore the various registers, joining the registers, etc. Our "Functional Unity Fred" is a comprehensive model of the framework for singing and includes (1) Posture and Alignment, (2) Breath Management, (3) Phonation, (4) Resonation, and (5) Articulation.]* _____ are another important element for the coordination of mind and motor skills.

A program of motor coordination also involves the areas of _____ and _____. Word pronunciation depends upon the proper use of the articulators (*[lips]*, _____, _____, teeth, etc.), and ease of production can be a problem when the vocal tract is under strain from lack of psychomotor coordination. Likewise, the expressive elements of _____, _____, _____, _____ and agility are all affected when there is interference in the coordination of _____, _____, _____, and _____.

Inaccurate singers _____ be taught to sing accurately. Researchers have had success with improving singing accuracy in a _____. Individual attention, however, helps _____ the process of remediation, and teachers should have some time in their teaching schedules to work _____ with students.

It is imperative in music education that _____ students _____ to _____. Young children _____ to sing. Singing is a _____ behavior – a _____ skill.

Chapter 3: Research on the Young Singer

A considerable amount of research exists, but information often fails to find its way into the hands of teachers. This chapter attempts to "close the gap between researchers and practitioners."

ELEMENTARY SCHOOL SINGING

Singing central to curriculum, but many children never learn to sing.

p. 45. Accompaniment:

- Simple harmonic accompaniment more beneficial than complex.
- Make little use of piano accompaniment, especially in primary years. You need to listen and assess children's singing, which piano inhibits. When used, piano accompaniment should be simple, with tonal progressions.

p. 45. Age:

- Number of inaccurate singers decreases with age and experience.
- All children should learn to sing, regardless of age, with systematic vocal instruction beginning as early as second grade.

pp. 45. Assessment:

- For assessment, melodic patterns found to be significantly better than songs.
- Choose short patterns of a small range, containing intervals of a 4th or smaller.
- Use four-beat patterns that include the interval of a fifth.
- Words often have primacy over musical features for young developing singers; words [may] serve as a distraction from pitch elements.
 - Children [may] match pitch more accurately when the song used for testing is familiar.
 - Test using both familiar songs with texts and patterns with neutral syllables.
 - For younger singers, unisons, descending minor thirds, and perfect fourths are easier to match than minor seconds and octaves.
 - Patterns should include both descending and ascending movement.
 - Use wait time, in which four beats are tapped by instructor during a period of “silent singing,” to encourage them to silently sing the pattern “on the inside.”
 - Singers, especially the young, sing more accurately when tested individually.
 - Use both individual and small-group singing as a way of “voice sampling.”
 - If a child cannot connect to his or her own voice, the “feedback loop” necessary to complete the psychomotor process will be missing.
 - Don’t sing with students. Use “voice sampling” frequently for students to hear their own voices within the classroom.
 - Children “cupping” hands behind their ears is a useful for enhancing vocal feedback.

p. 50. Attitude:

- One great obstacle: negative attitude toward “school” music.
- Girls’ attitudes toward school music were more positive than boys. Create a “safe” environment so that both sexes feel comfortable, especially when singing.
 - Children begin with positive feelings about singing and general music, which decreases as grade level increases.
 - TKTS is sympathetic to teachers’ inability to compete with the world of pop music that surrounds students; recommends that all students learn to be active music makers instead of music consumers.
 - Music self-esteem was greater for females than males; music self-esteem a strong predictor of participation in both school and out-of-school activities.
 - “The data indicate the one-third of all subjects have no involvement in music activities and an additional one-third of the sample participated in one school music activity but engaged in no form of music activity outside of school.”
 - Teachers should encourage active music participation at the elementary level, “with particular attention paid to young males.”
 - “Singing Playgrounds” is an educational outreach program devised to develop children’s musicianship through singing games.

p. 51. Audiation: Pitch Discrimination

- There appears to be a direct relationship between audiation and singing accuracy.
- Inaccurate singers are not “tone deaf” or lacking in sufficient musical aptitude to match pitch.” . . . “It may be that persons who complain of having a ‘tin ear’ actually hear better than what they think.

p. 53. Gender:

- The TKTS method, being physically oriented in a number of exercises (Energize the Body and Breath) might be especially appealing to boys who prefer moving to sitting or standing still.

p. 54. Home Environment:

- “A significant positive relationship was found between the home musical environment and improvement in vocal accuracy,” especially in homes where parents had played a musical instrument. Pre-school parents need know the impact they can have.

Kodály Instruction (Hand Signs):

- Three research studies are known that support the belief that this well-established technique used by many elementary vocal music teachers [and others] is not helpful.
- Hand signs are a mnemonic device, or memory aid, used as a “stepping stone” to music literacy. Failure of research to support it “does not discount the value this system has in learning to read music.”
- Use of hand signs is recommended; experienced teachers know the kids enjoy using them.

p. 55. Modeling:

- Research concludes:
 1. Children match better when model is presented in their own singing range;
 2. Child voices and female voices are best models;
 3. Male teacher singing in falsetto (male alto) is better than natural voice an octave lower. Research results improved significantly w/falsetto modeling.
- Vibrato should be reserved for solo work and kept out of elementary classroom.
- Use your “simple tone,” a folk-music style lacking in solo properties.
- Men need to learn to model in the male alto voice, especially for primary grades, where students are more confused by natural voice an octave lower. However, it is better to model a “simple tone” than to model an octave higher if the tone is pinched and feeble. Whatever the case, the male teacher music be comfortable in chosen voice used to model.

p. 56. Motor Coordination:

- Multiple research studies based on TKTS, in part or in whole, to test effectiveness of motor coordination techniques in a variety of settings. Method effective each time in producing positive results. One of the most researched methods currently available.

p. 57. Range and Register:

- Problem in research methodology: are students tested singing in head or chest?
 - Most children who lack proper vocal instruction will go to chest if given a choice.
 - TKTS presents numerous exercises for helping children find both head and chest registers.
- Ranges: one octave (c1 to c2) beginning in first grade, expanding over time to a two-octave range (g1 to g2) in sixth grade.
- Rarely can head tone be found by ascending to it, especially if by step. The singing of descending pitch patterns from higher pitches works better to blend over the register “break.”
 - Cultivation of the upper or “head” voice in children is paramount to producing a beautiful singing tone. Unfortunately, popular vocal models in the media, with the emphasis on lower or “chest” voice production provides the wrong model for children’s singing.
 - Use a balanced approach (lower, middle, upper). It is the vocally healthy mode of singing. Have children develop a three-register approach to singing, which eventually leads to one, blended register. Work begins by separating the registers (head and chest) and then vocalizing the “top down” for a middle register (blended head/chest).

p. 58. Song Acquisition:

- Two ways of teaching by rote: immersion and phrase-by-phrase.
- TKTS advocates the use of immersion technique for teaching short, simple songs, such as “Hot Cross Buns,” and echo-phrase or phrase-by-phrase when songs are longer and more complex.

p. 59. Song Literature:

- Little correlation between song literature that experts recommend and the songs that most people know. Whatever the literature chosen, it should be the goal to use the highest quality music available.

- “It would seem that college professors teaching music to elementary education students will need to continue introducing a repertoire of standard songs....”

- TKTS: pursue quality song literature now available through the contemporary children’s choir movement. Numerous publishers have series by such prominent music educators as **Jean Ashworth Bartle, Betty Bertaux, Emily Crocker, Rollo Dilworth, Mary Goetze, Henry Leck, Doreen Rao**, and many others. A list of easy choral selections, useful in the elementary general music class (unison and two parts) can be found in Appendix B.

SECONDARY SCHOOL SINGING

p. 60. Assessment:

- If choir is ever to be considered an academic subject, it would seem that student achievement must involve testing for knowledge and skills. TKTS: use a Vocal Technique Evaluation Form that uses qualifying statements in the style of a rubric (see Chpt. 9).

p. 61. Attitude:

- Choral contests have less appeal for students as they mature.
- TKTS: no recommendations regarding competitions. *[Can be helpful recruiting tool.]*
- Factors important to junior high boys: love of singing, teacher influence, peer influence, and repertoire they like. Less importance accorded to range-appropriate repertoire; boys tended to find notes out their ranges with inventive and coping strategies.

- TKTS: key to attracting and keeping singers is a quality choral program. When students feel good about the ensemble they’re in, they stay with it. *[and attract others]*

pp. 61. Changing Voice (Female):

- Although the larynx of the female does not undergo as big a change as the male, her larynx thickens, with growth that is more lateral than front to back, as it does for the male. Few research studies are known in the area of the female changing voice. *[Remember: though less dramatic, it is no less important.]*

- One of the earliest *[and best known]* studies of the adolescent female voice was done by Lynn Gackle (1987).

- Girls have an incomplete closure of the posterior region of the vocal cords, which results in the characteristic breathy quality of adolescent female voices. *[a completely natural thing which should be dealt with sensitively]*

- The common factor of breathiness can be modified by teaching good vocal technique, especially in the areas of breathing and phonation; *[however, these young voices will never sound like older girls/women, and should not be forced to sound that way. Please let nature take its course!]*

p. 62. Changing Voice (Male):

- There are numerous descriptive studies, but little true experimental research (cause and effect). Male voice change can be erratic, with some changing rather quickly, and others, rather slowly. Observations: boys who change quickly tend to become baritones and basses, slowly changing voices often become tenors.

- Trauma often associated with male voice change:

1. Boys had more vivid memory of voice change than did adult men.

2. Singers noticed voice change more than nonsingers.

3. Singers noticed changes affected both singing and speaking more than nonsingers.

4. Boys mentioned voice pain or thinking they were ill at onset of change than did adult men.

5. No significant difference was found across groups as to overall effect of change.

- It is advisable to disseminate information to future choral educators about the musical experiences and sensitivity necessary to instruct changing-voice boys more effectively.
- Voice change happening earlier than junior high or middle school?
 1. Voice change occurring among many 5th and 6th graders.
 2. Voices seem to be changing earlier than indicated in previous research.
 3. Pitch (singing and speaking) lowered as the change process advanced.
 4. Overall range narrowed.
 5. Speaking pitch remained two to three semitones above lowest singing pitch.
 6. Majority of boys believed their voices were different a year before the study.
- Boys could sing with wider vocal ranges when taught to sing in two distinct registers (chest and male alto). “The subjects...were capable of demonstrating an average range of two octaves when they were singing in both lower and upper registers.”
- TKTS: instruct young adolescent males to use chest and male-alto registers with a blended middle register (*passagio*).
- Princeton Boy Choir:
 1. Although patterns exist, each young man’s experience was unique.
 2. Exploring and using a wide singing range has no detrimental effect on the voice.
 3. Singers need to learn good vocal technique to keep from harming their voices.
 4. Teaching boys in a single-sex environment may be beneficial during voice change.
 5. Helping young men navigate through the frustration of the voice appears critical.
- 84.8% of surveyed choral directors felt their college-level training had not prepared them adequately to teach boys with changing voices. Research needed that focuses on social psychology of male singers to stop “the exodus of male singers from choral programs.”

p. 64. Chorale Sound Quality:

- Improving vocal quality of a choir is uppermost in minds of most choral directors. Vocal quality is often related to signers’ spacing, standing formation, blended versus solo-style singing, and acoustic voice matching.
- Singers’ spacing and standing formation: singers preferred spread spacing more than close. Singers thought they could hear themselves and the ensemble better when using spread spacing. Singers preferred mixed standing formation (women more than men). Standing further apart in mixed formation was the preferred standing position.
- Effects of (1) solo vs. blended choral singing, and (2) random vs. acoustic voice-match standing/seating positions were studied. Choral directors and singers preferred blended over solo-type singing, but this was not the case for voice teachers and nonmusicians. Voice teachers ranked individual solo singing higher than solo-type choral singing. All participants preferred the acoustic-voice standing/seating positioning. Choristers found that acoustic seating helped them to hear their own voices and sing in tune. They also had a greater feeling for blend, permitting greater vocal freedom.
- “The debate between choral camps as to blended versus solistic singing comes down to preference. There will never be a right answer when it comes to matters of taste.... Do choral directors ever ask singers if they have a preference for the style of singing they use and how they stand in formation? Perhaps choral directors should ask!”

p. 65. Cultural Impact on Singing:

- An appreciation of diversity is a central issue in education, as in music.
- Chinn’s (1997) study provides insights into the problems African American girls can have when singing in environments that are primarily Caucasians. Results showed that half the subjects felt uncomfortable in predominantly “white” choirs. The high-mistrust group also had problems with “white” vocal characteristics, and “demonstrated more characteristics associated with African-American culture than did the low-mistrust group.”
- Consider how cultural mistrust might influence student responses to instructional practices and literature when you plan your teaching. Teachers teach people, and knowing the

cultural background that students bring to the classroom can make or break the success of any music group.

p. 66. Curriculum:

- Safe to say that a standard curriculum for American choral music education does not exist.
- “Until choral music educators form a clear vision of what components are vital to an appropriate, high-quality choral music education at the middle level, teachers will continue to struggle to balance the many voices competing for attention.”
- Choral music educators lack unity. They mainly focus on preparing for concerts.
- Growing influence of the national standards create a prime opportunity for choral music in the middle to demonstrate its value to the growth of the middle level learner.

p. 66. Literature:

- There is so much new literature available each year as to make the task of choosing appropriate music almost overwhelming. For one piece that “works,” there are dozens that don’t. Finding good, quality repertoire is, perhaps, your biggest job.
- Choral directors: there is no uniformly structured criteria for selecting music.
- Directors tend to think more about educational value when choosing classical literature, but more about entertainment value when choosing popular music.
- Remember: first and foremost, you are music *educators* and not entertainers [*though that doesn’t mean that educational value can’t be entertaining at the same time: this is where effective concert programming comes into play!*]. Education presupposes that some form of quality learning is taking place both in subject knowledge and skills development. [*Can’t a quality concert reflect this and still be “entertaining” to the audience?*]
- Experienced teachers choose more Baroque music for beginning high school choirs. [*Why do you think this is the case, musically?*] Contemporary music was the genre most often performed.
- Directors may want to expand beginning choir literature choices to promote positive musical experiences with a balanced variety of styles and historical periods.
- Choral directors in Virginia found college methods classes to be the least valuable resource for finding beginning high school choral literature. “Preservice teachers need to be given the tools to work effectively with choirs of every age and level, and the skills to appropriately select and locate music materials.”
- “Those at the college and university level who prepare future choral music educators must communicate that all music chosen for performance should have educational value.”

p. 67. Modeling:

- Not surprisingly, males were found to sing better with the male model, and females with the female model. “...Singers match more accurately with voices like their own.” “In situations where the teacher’s gender is not the same as the student’s gender, another student of the appropriate gender might serve as a better model than the teacher.”
- Use models frequently with student groups.
- Students in undergraduate choral methods classes need to learn to model in various ways.

p. 68. Reflective Thinking:

- Reflective thinking is valuable for a teacher’s self-evaluation process and is quite prominent in general education. Choral music education is just beginning to study this introspective approach.
- Five measures of reflective thinking were found to be helpful:
 1. Ensemble rehearsal critique
 2. Beginning-of-semester questionnaire
 3. Tape-recorded peer-student critiques
 4. Student journals
 5. Tape-recorded interviews

- Reflective thinking heightens student self-awareness in choral ensembles and promotes richer reflective activity. Use of process folio to “move from paper and tape collection to an electronic portfolio” is recommended.

- Consider keeping your own daily reflective journals, write an autobiographical narrative, or complete reflective narrative exercises.” Results:

1. All teachers used new approaches in the pedagogical, curricular, personal/professional, or critical categories;
2. Teachers encountered varying levels of success when initiating change;
3. Teachers became more self-motivated as study progressed about conversing and writing in detail;
4. The richness of past experience and support of influential people contributed to teachers’ desire and ability to reflect;
5. Teachers became more empowered in a way that altered their perceptions of what was possible in the way of change.

- Journaling is a beneficial tool in helping teachers to understand themselves in relation to the work environment. *[This is why our PTE process includes a written self-evaluation.]* Unfortunately, time restraints often prohibit this activity.

p. 69. Rehearsal Strategies and Techniques:

- What works best in choral rehearsals as to effective teaching strategies?
- Teacher feedback in rehearsal: Females rated approval factors higher than males; males rated disapproval factors high than females. “Girls were more responsive to adult praise than to praise from peers, whereas the opposite was found in boys.” “...[D]ifferent ratios of positive to negative feedback for male and female students are implied.” “...[S]uccess was viewed by students as being largely due to internal factors (e.g., effort and ability) rather than external factors such as teacher, task, or luck.”
- Teacher reinforcement and feedback influences students’ attitudes. The addition of teacher academic reinforcement might produce better musical performance.
- Conductor verbalization, dynamic markings, conductor gesture, and choir dynamic level: Verbal remarks from the conductor were significantly better than written dynamic markings, gesture, and choral listening in soliciting dynamic responses from all singers. Verbal instructions should be extremely concise. “Thus, conductors talk dynamics.”
- Choral conductors should “show” what the level and size of conducting patterns mean in relation to various dynamic levels in the music.
- Teacher discourse (scaffolding and nonscaffolding language): “...transferring responsibility for learning from the teacher to the students and task-based support (reinforcement)” works. Evaluate your use of scaffolding language *[and use of the piano!]* as a way of improving rehearsal communication.
- Keep rehearsal behaviors on task, use high percentage of approvals, more eye contact and student activities from 5-6 seconds. In conducting and choral methods classes, maintain a fast pace, to allow for singers maximum performance time, and keep instructions brief and to the point. *[Especially in “intense rehearsal modes,” like our PTEs, try to use 5 words or less for your directives. Keep students singing, especially when you’re observed [and nervous?]. Added advantage: less opportunity for you to over-talk and say something in error. Let your excellent teaching (perception; increased awareness) be reflected in their excellent performance (response, sensitivity, musicality)!]*
- To be successful: maintain moderate *[or high!?!]* eye contact, present many activity changes *[for facilitating greater perception]*, allow for a high percentage of student response time *[performance]*, and rapid pacing. *[Always important, unless there’s a reason not to, i.e., reflective discussion, in-depth discussion about the music (use sparingly), cooperative learning in groups, etc. Slowing the pacing at appropriate times can create a refreshing “ebb and flow” within a lesson, but remain vigilant that the students keep engaged and the momentum of learning continues.]*

p. 71. Sight Singing:

- Effectiveness of using specific pitch skills: “Targeting specific pitch skills in both familiar and unfamiliar melodies shows promise as an effective tool for sight-singing instruction.”

- Less than half of all states require sight-singing. “Since vocal music students are notoriously poor sight-readers,” it would make sense to add “pressure on students to prepare for sight-singing adjudication.

- “[M]ajority of choral directors did not think their undergraduate college methods courses prepared them to teach sight-reading to their choirs. In fact, around 18% marked no influence at all.”

- Practice strategies:

1. establish the key,
2. use hand signs,
3. practice out loud
- 4 physically keep the beat

Use of study and practice time prior to sight-singing evaluation was recommended.

- “Directors talked about 42.46% of the total time...and allowed 52.54% of the remaining time for students to respond without the teacher talking.” “[R]einforcement is more effective if it is specifically related to the musical task.”

- Most of the directors were found to use moveable *do* as opposed to fixed *do*.

- “Unfortunately, it remains that **research has not identified any superior method for teaching this vital skill**. It is rare that commercial publications have any research base...**Choose an instructional approach and use it regularly**. Clearly, research into sight-singing methodology is warranted and needed.”

p. 73. Teacher Preparation:

- Five areas found to be important by student teachers for teacher preparation:

1. Beliefs about teaching and learning;
2. Orientation to subject matter;
3. Perspectives regarding curriculum and planning;
4. Reflection;
5. Images, models, and metaphors.

In addition, student teachers tended to be more concerned more with their own image than about what was happening with students being taught. *[It’s completely natural. You do have to know and feel comfortable with yourself before you can help others most successfully!]* As students gained experience, they were able to demonstrate a more global perspective on their role as music educators. *[This is what we’re trying to accomplish, early in your development, with this course!]*

- Teacher planning process that leads to effective rehearsals. Alternative model that emphasized brainstorming and imagining during sessions with the instructor. Data:

1. Written teaching plans
2. Videotapes of conducting episodes
3. Teacher and researcher field notes
4. Students’ written assignments.

Results: brainstorming discussion with instructor was found to induce in-depth score study and analysis, and student more readily linked pedagogical knowledge to teaching.

- Difficult for students to grasp the process of score study in anticipation of choral rehearsing. Encourage brainstorming that requires students to “think out loud” in the process of score study. Such preparatory technique is process oriented, and actively engages students in mapping out a score, which then helps to reveal the “plan of attack” for teaching it. Score study is something every choral methods student should understand.

Chapter 4: The Child Singer

p. 82. Beautiful singing does not come naturally to most kids – it is a _____ behavior.

CHARACTERISTICS OF VOCAL DEVELOPMENT

Foundation for singing begins in _____ years w /informal and nonstructured vocal exploration.

p. 82. **The Preschool Singer.** As “infants are ‘programmed to learn,’ they might also be described as ‘programmed to sing.’” A type of imitation in which children engage in vocal play has been called “_____.” This should be encouraged and _____ to by adults, “for it is through the responses of those around them that infants learn to attach _____ to their _____.”

p. 83. Period of vocal play and experimentation followed by a period of “_____” (18 months to 3 years) Early singing experiences should include speech activities like vocal chants and _____. Young children need an environment _____ in musical experiences, including _____ by and with adults.

Singing skills, another form of language, should develop as well.

pp. 83-84. Children who have had many singing experiences begin to sing accurately in a range from approximately _____ to _____ by about age three. Many children sing in their speaking or chest voices, but should be encouraged from a young age to explore the _____, or _____, voice and to employ this voice for singing tasks. Children can become “trapped” in their lower voices at an early age; have them discover and sing in upper voice for a time w/o attempting to combine it with lower register. They should be encouraged to:

- sing _____
- do much _____ singing
- listen to their _____ voices
- continue to explore _____ in speech and song

Songs should generally be _____ and contain much _____ of melodic and rhythmic patterns. Use _____ and _____ patterns, and half steps should **not** be avoided. Descending interval of a _____ has had a traditional place in melodic patterns and song literature of preschoolers. Enhance sung performance with use of _____, _____, and _____.

p. 85. Preschool years are tremendously important for the _____ of musical learning. Unfortunately, these are the years most often _____ for regular music instruction.

p. 85. **Physiology.** Even by first grade, lungs of children are not fully developed and therefore not capable of full, _____. By age _____, lungs are in similar position structure to adults. This is when vocal instruction usually begins in the boychoir tradition. TKTS recommends that breathing exercises begin in the _____ grade, when the child is ready.

As the young child matures and speech develops, the larynx _____, the laryngeal cartilages _____, and lung volume _____. This process is _____ and continues through puberty.

p. 86. “[Y]oung singers have limited ability to increase intensity without impacting _____; child singer has reduced capacity for vocalizations that are _____ long, agile, loud, high or rich in timbre.”

p. 86. The Elementary Singer

[Please read this section carefully, but we'll assume that you've already studied much of this in Elementary Methods. If not, please let me know during our discussion what needs to be reinforced/what you're less familiar with, in general.]

p. 87. Children's singing can be thought of as a _____ process that required distinctive teaching strategies. Help for children who are lagging in singing voice development should include (along with TKTS techniques) songs and games for chanting and echoing in individual as well as group singing. They need to experience singing in _____ with voices and, most importantly, need to exercise from the _____ register _____ with a light head-tone production. The _____ register should *not* be suppressed as it naturally _____, but singing in this register must be kept _____ in order to minimize its predominance. The range of songs should be kept _____ middle C, below where the chest voice typically takes over.

Third grade is a _____ year in the life of children. No longer “babies” and “boy-girl distinctions” become ever clearer. Many children already ambivalent about singing are only further alienated by not being _____ for the select choir. Do everything possible to assure children that singing skill is not determined by _____; it is something everyone can *learn* to do.

p. 88. By _____ grade, children really begin making a beautiful tone. More demanding song literature with _____ phrases and wider _____ is possible, and more attention can be paid to details in musical _____. Introduce singing in _____, with all students _____ singing melody and harmony parts in different selections. Dynamic level may be increased, but not beyond _____. Inaccurate singers should be given individual _____ help.

Vocal development and tonal purity _____ in the fifth, sixth, and seventh grades. A range of up to _____ octaves (g to g2) is possible, with _____ - _____ upper register, a _____ lower register (below middle C), and a middle register (c1 to c2) that brings into _____ the head and chest registers. Developing vocal technique is evidenced in:

- (1) _____ attention to posture, breath management, pitch accuracy, resonance and diction;
- (2) special focus on the meaning and _____ of the song texts;
- (3) encouragement to participate in _____ singing;
- (4) asked to make _____ judgments regarding correct vocal technique and quality;
- (5) _____ dynamics to an occasional *forte*, without sacrificing beauty of tone;
- (6) beginning to prepare students in upper-intermediate grades for the eventuality of the adolescent voice _____.

VOCAL PARAMETERS

p. 88. Vocal Registers. Trained adult voice is capable of producing an average vocal range of _____ octaves. Range is divided into areas called _____ (see Ex. 4.1), which may be defined as “a group of like sounds or _____ whose origin can be traced to a special kind of _____ (muscular) action.” *[Think of them as “gears,” where negotiating registers means learning how to smoothly “shift” or “blend” from one “gear” to the next,*

using breath management and resonance as you would the “clutch” and “accelerator” to help change “gears” most successfully (smoothly).]

p. 89. Physiology. Garcia (1894): Three vibratory patterns of the vocal folds identified as responsible for _____ vocal registers. _____ edges of the vocal folds vibrate in the upper, or _____, register; full _____ and length of the folds vibrate for the lower, or _____, voice. The two mechanical principles _____ in the middle vocal register. It is the goal of voice training to produce _____ vocal production that sounds like it is made up of _____ vocal register. [Goal: consistent sound from top to bottom of range; quality of sound is more important than quantity of sound.] Nevertheless, physiological evidence for _____ vocal registers has been well established.

p. 90. A singer should be able to pass from one register to the next without noticeable _____ or _____ of vocal quality. Not only must the physical action of the vocal folds _____ at the moment of transition between registers (sometimes called “_____”), [again, think of changing gears on a bike, motorcycle, car, etc.] but the resonators also must acoustically _____ to the shift in registration. [This is what the “functional unity” is all about: coordinating all the aspects of singing for the most smooth, efficient, and successful operation of the voice!]

Students should be encouraged to maintain a laryngeal “_____” position throughout the singing act. Untrained singers unconsciously elevate larynx as pitch rises, often as a result of insufficient breath pressure. This produces tension and results in “_____” singing. High larynx also reduces the size of the vocal tract (“_____”), thus diminishing the quality of sound and making register transition more difficult. “As the larynx is lowered, it imparts to the laryngeal organs a stability they could not obtain with the vibrator at a higher point and with the _____ tube altered in width and length.”

p. 90. Child Vocal Registers. Voice specialists today label the head voice as a ____-dominant register (refers to contraction of the *cricothyroid* muscles), which causes the vocal folds to lengthen and become thinner. Similarly, the chest voice is labeled a ____-dominant register, which refers to the contraction of the *thyroarytenoid* muscles within the vocal folds. This causes the vocal folds to shorten and become thicker. Middle voice is produced by contraction of both sets of muscles (____/____) to varying degrees of vocal fold adjustment.

Common major problem: how to _____ registers when _____ in pitch. Note: children who sing predominantly in the _____ register have intonation problems and often effected gross changes to the vocal tract by pushing out the lower jaw. Children able to use the _____ register have greater registration options. Vocal ranges of maturing children often vary, depending on their capacity to move from the _____ (TA-dominant) register to the _____ (CT-dominant) register.

p. 91. Singing _____ in either CT- or TA-dominant registers in the middle voice is discouraged, but some types of music require more of one _____ function than the other. Students should be encouraged to seek more _____ of production over _____. [Again, tone quality over quantity of sound.]

TKTS does _____ advocate the complete _____ of the lower register, but instead favors a _____-register approach (upper/CT, lower/TA, and middle/CT/TA), as shown in Ex. 4.2. The middle register bridges the transition from lower to upper voice, and results in a **50-50** balance of registers at approximately _____. (see Fig. 4.1) Middle voice uses _____ vocal-fold width as the pitch ascends. When pitches are produced in the correct register, the sound is _____, pleasing, and vocally _____.

p. 92. Child's lower register is quite _____ and can be used to sing _____ middle C, but it sounds harsh and _____. It is also potentially _____ to the vocal folds. Like driving a car at 60 miles an hour in _____ gear: the transmission is _____ built to withstand such abuse, and neither are the vocal folds.

English _____ model has _____ use of chest voice for centuries; results of _____ upper-voice approach are widely admired. TKTS concludes that the English approach is _____ a healthy pedagogy, however, and does not result in a _____ sound, especially in the _____ voice. [Read more on pp. 92-93. How does the "European" or "Continental" sound differ?] TKTS does not advocate a total _____ of the English approach.

p. 93. When the lower register is permitted to _____ with the upper, the voice maintains a _____, robust quality. The blend must be accomplished from the _____; that is, vocalises begin in the upper voice and move _____ into the middle register (c2 down to c1). This approach permits the gradual _____ necessary for a _____ of vocal-fold vibration in the _____ voice. This technique of _____ registers is best learned from the _____.

p. 94. The pitch _____ (evenly divided between lower and upper) is the _____ note in balancing the middle register. Young singers can be taught to _____ for (and feel) the changing balance of qualities in the middle register. It's surprising how _____ their ears can become through this process.

Developing the upper, middle, and lower registers in young singers' voices provides for exercise of the total voice and prepares the way for a healthy passage into the adolescent voice. It also results in a fuller tone quality that is more appealing to young people. All _____ registers should be cultivated so as to produce a smooth _____ without perceptible breaks.

_____ singing results in exclusively lower registration.

p. 94. **Singing Popular Music.** Much popular singing is of the "_____" quality, that is, a production of predominantly _____ - _____ registration. "...[S]hould a child be permitted to belt songs in this and similar styles, given the fact that vocal _____ is likely to occur when the chest voice is _____ too high in the vocal range?...No... any child who sings the role should be taught how to _____ the chest register in the middle voice so as to _____ the vocal folds and cause less _____ to the vocal source.

Robert Edwin believes in "_____ belting" or what he calls "_____ " for the voice. His idea of _____ the upper and lower registers in the middle voice is similar to TKTS strategy. Although this belting production calls for greater vocal _____, which can add more _____ to the _____, the thinning of the vocal folds minimizes the tendency of the fold to _____ together, as seen in exclusive chest-voice singing. [See block quote, p. 95] "Good and healthy belting is a _____ of TA and CT muscle activity combined with _____ that does not _____ or over tax the instrument. This requires specific breath management technique. . . . the throat narrows and the larynx rises, creating a more speech-like tonal quality."

It is the responsibility of the music teacher to keep children from _____ their voices by loud and intense chest-voice belting. Again, the healthy voice is the one that sings in all _____ registers: CT, TA, and CT/TA.

Children should be to sing a _____ of styles, using the correct vocal _____. The pivotal factor is the _____ of the _____ voice in the middle register. The greater the intensity, the more the _____ voice takes over. The less the intensity, the more the head

voice emerges. A true _____ of registers at approximately f#1 is the key to blending the CT and TA registers into a single register from top to bottom of the child's singing range.

p. 95. VOCAL QUALITY. A very subjective parameter. "[G]eneral _____ quality" as one characterized by having bell or _____ - _____ resonance, "_____ - _____" singing with TKTS exercises to _____ larynx, jaw, tongue, and pharyngeal constrictors in order to maximize pharyngeal resonance and the "open throat" feeling. Singers feels the _____ of singing above the throat, high in the soft palate, as if one sang without any throat at all."

Faulty technique: _____ larynx. With _____ vowel enunciation, support and _____, the young singer can produce a vocal quality of great beauty. Vocal quality is very much influenced by _____. [Again], develop two distinct registers (chest and head) that overlap in the middle to form a third, _____ register. . . so that the voice sounds like a single vocal line throughout the entire singing range.

p. 96. Child Vocal Quality. Untrained children's singing voices tend to be either _____ and boisterous or _____ and whisper-like, both of which originate in faulty vocal technique. "...[C]hildren and adolescents should be taught the _____ and _____ of the body in singing." The well-produced child's voice is clear and _____ in the upper register (c2 to c3), as in the traditional choirboy model.

p. 97. Very _____ and very _____ dynamic levels should be avoided through childhood; both call for a vocal technique beyond the maturity of most children. When the upper (CT) and lower (TA) registers are permitted to _____ in the middle register (c1 to c2), the child's vocal quality is perhaps _____, yet still full and robust. (Again, pitch f#1 is critical.) Exercises and vocalises must begin from the _____ register and move _____, permitting the natural _____ of the lower voice. Later, the voice can be exercised from the _____ in order to teach the subtle _____ to the upper register on ascending lines.

Lower chest-voice register has warm, vital quality if _____. The chest voice should never be _____; the resulting sound is always _____ and undesirable. Children's voices do not sound like mature voices, but greater _____ and richness are possible when children learn to keep the larynx at _____, maximizing the pharyngeal resonator.

p. 97. RANGE AND TESSITURA. _____ refers to the number of pitches, or distance between the highest and lowest pitches a person can sing. Two types: physiological and _____. The latter are musical tones that s/he can _____ accurately. _____ refers to general region of a vocal part within _____ pitches fall. Tessitura must be _____ to determine whether the majority of pitches remain too high or too low.

p. 98. Vocal teachers must _____ the _____ tessitura of singers at various ages to choose _____ literature.

p. 98. Research on Vocal Range. Young children's spontaneous singing ranges are _____ than traditionally reported. Young children's songs should be pitched in a limited range (c'—a') which gradually _____ as the children mature. In spontaneous singing and play, young children may be capable of ranges up to _____ octaves. When put into a musical context, however, the song defines _____ pitches and patterns that may not be in the young singer's vocabulary. "It would appear that choosing songs with _____ ranges, small-sized _____, and prevalent _____ melodic lines would accommodate this processing procedure."

p. 99. Another reason for the difference between physiological and musical frequency ranges may be that young children cannot attend to words and pitches _____. Kindergarten and first grade more accurately sing in tune using a neutral syllable such as _____ than with words.

Children showed significantly _____ range for singing in the higher vocal register. When exposed to a higher vocal register, the students were able to make the transition quickly to this _____ voice, resulting in a wider vocal range. Children should exercise _____ lower and upper registers.

p. 100. Child Vocal Ranges and Tessituras. Tessituras are the _____ in which the _____ of pitches should be located. Ranges and tessituras do not follow the trend of _____ vocal ranges discussed in the previous paragraph. Limited range in the primary grades is gradually expanded to a full two octaves in the sixth grade, based upon the assumption that the _____ - _____ approach and necessary vocal techniques are taught. *[Be aware of the general trends shown by the ranges/tessituras illustrated on pp. 100-101.]*

pp. 101-104. Teaching a Song. *[Will assume you know all of this from your work in Elementary Methods, especially the two instructional strategies: immersion (holistic) vs. whole-part-whole (phrase-by-phrase), etc.]*

Chapter 5: The Adolescent Singer

p. 109. Adolescence: time of _____ from childhood to adulthood; thought to begin in seventh grade (age 12-13) and to end with high school graduation (age 17-18). Puberty: teenagers reach sexual maturity; voice change occurs, often peaking in the _____ grade. Voice change among boys can occur as early as fifth or sixth grades. Puberty among females can begin at any age from 9 to 13, and may take up to five years to complete. For males and females, voice change tends to be _____ by age 15 or 16.

p. 109. THE NATURE OF ADOLESCENTS

Mood swings are a typical part of the growing-up process.

p. 110. Human brain undergoes a massive _____ from ages 12 to 25. Complete adaptation only when people reach their mid-twenties. Teens are “works in progress.”

p. 110. Psychological Factors. _____ is common among adolescents. Signs of depression:

- lasts for more than two weeks,
- change in appetite,
- change in sleep,
- change in concentration,
- change in mood,
- most importantly: change in ability to really _____ things.

Depression often leads to isolation and feelings of separation; unrecognized depression can lead to suicide. (If you are having persistent thoughts about suicide, call the national suicide prevention lifeline at **800-273-8255** to speak with a counselor.)

p. 111. Mental state of adolescents often prompts them to focus inward. *[This is why music ensembles can be so helpful to bring them out of their shells and interact with others in the music making process!]* Young adults need to know they aren’t alone in this transitional process. All need to be reassured that a normal adult life awaits them at the “end of the tunnel.” Kids need to know that “it gets _____” and teachers need to tell them. *[Be their “lighthouse in the storm”]*

Peer approval is another issue that intensifies during adolescence. Need to belong to a _____. Young men have _____ needs in this area than young women. Girls tend to be more _____. Vocal ensembles help create a kind of family environment in school; ensembles can help satisfy the need to belong.

Drop in _____ is another psychological factor that teens face. Stronger among girls, but boys also suffer, especially the “_____.” Answer is communication. Adults must be willing to address these issues, which then can be placed in perspective.

Wide _____ in students, especially seventh and eighth grades: physical size, personality, mental ability, and emotional stability – or instability. Girls, in general, are more mature, but both sexes can be insensitive in the way they treat their peers.

p. 112. “Teachers who have insights into their students as “works in _____” are much better equipped to deal with the psychological challenges that frequently arise.

p. 112. Teaching Adolescents. Requires great _____ and _____. Teachers must work to win over these students in ways that create mutual respect and _____. When a bond is created between teacher and adolescents, there is no group more dedicated and _____ than a class of junior or senior high school students. [*This is SO true. It’s magical. Successful teachers are so in-demand at the junior high level. Please consider this!! It’s really fun. . . and they can do so much. Observe MCCL to see what I mean.*] Athletic coaches can help bridge the gap between sports and music activities. Open and honest _____ concerning process of vocal maturation is a necessity.

Consider _____ music classes for boys and girls at the middle level, especially 7th and 8th grades, to work more effectively with problems unique to each sex and lessen embarrassment and tension between boys and girls. They could learn both common and individual repertoire, combining for a couple of mixed-voice selections in the concert.

Students should be kept singing throughout the early adolescent years. Singing must be a component of the seventh- and eighth-grade general music curriculum. Most singing in general music classes is based on the _____ approach. TKTS: _____ approach is often more appealing to students who are trying to deal with their changing bodies. Singing can be demonstrated to require the same level of physical coordination practiced by serious _____. It’s never too late to teach people how to sing!

p. 113. Song texts for early adolescents are another important consideration for stimulating interest in singing. Careful of texts considered “_____.” See *Kum-ma-la-ma festa* (Ex. 5.1) for fun call-response song.

p. 114. Adolescent male chorus is another means for sustaining interest in singing among boys. (According to federal law, a male chorus must not be called a “boys chorus,” to avoid the appearance of discrimination.) [Currently popular to call these ensembles “_____ choirs.”] The *esprit de corps* among the boys helps to support their choice to sing. Consider: alternate days for boys and girls at the same time, combining on Friday. Sexist?: when boys _____, girls _____ up. Teachers can have tremendous impact on lives of students as they learn to sing and share the gift of song; learn to become “givers” and not just “takers.” [*Again, you’re a lighthouse in storm!*]

p. 114. THE ADOLESCENT FEMALE VOICE. Female Voice Change. In general:

- Puberty begins _____ in girls than boys;
- Girls experience a rapid growth spurt at 10 or 11 years old, several years before boys;
- At midpoint of puberty (12-1/2 to 14-1/2), most girls experience first menstruation, which has traditionally been considered the end of childhood.

p. 115. Growth of female larynx:

- Not as _____ a change as that of male;
- Thickens and grows in lateral or rounded direction;
- Vocal folds grow less than those of male, _____ - _____ millimeter increase;
- Growth results in slight _____ of speaking voice, lower extension of singing range.

Read about specific physiological changes. First sign of change: _____ or unsteadiness of the speaking voice caused by increased _____ of vocal folds. May be accompanied by certain amount of breathiness, the result of air passing through the “_____.” This is a triangular gap between the posterior ends of the vocal folds; happens as a result of weakened interarytenoids that fail to _____ the folds completely for phonation. Flutelike quality of child voice is replaced by the husky, breathy sound of adolescent female. Must be treated with care by music teacher to maintain positive attitude toward singing.

p. 115. Female Vocal Quality. Alter one’s conception of ideal tone from “loud and full” to “soft and pure.” [*quality more important than quantity*] Good _____ and realignment of the voice encourages young women to improve their singing and understand how new sound is a _____ condition. At this age, many girls are labeled altos because they seem to lose their ability to sing high notes. “Very _____ young females should be categorized as ‘altos’ or even mezzo-sopranos at such an early age.” After singing alto for an extended period of time, many girls become convinced that they are limited to this part and develop only the chest register for singing. [*I call this “alto-itis.” Avoid this!!*] Inaccurate singers respond to remedial help in training head-voice technique with “significant gains in individual pitch accuracy and melodic contour as a total group.” Unstrained, light, upper-register vocalization is a must for all adolescent girls.

Senior high girls can achieve a mature vocal sound with the proper voice instruction. Careful not to **strain** these voices. New voice is still emerging and must be treated with care. Human voice is a delicate instrument but capable of great endurance when treated with respect. (Vocal Health, Chapter 8) Use recordings of excellent child and adolescent singers as models of vocal quality.

p. 116. Teacher’s voice also should serve as a good _____ for young singers. Students should _____ “copy” the sound of their teacher, but the model voice should be free, resonant, and capable of projecting easily. Use other students or teachers as models.

Beautiful voice quality enhanced by even _____, which is the product of good vocal technique (*freely functioning sound*); slight, even pulsing of the voice should be encouraged as the voice matures. This is the _____ for high school students when good vocal technique is taught. Non-vibrato = too much throat pressure (_____ voice) as result of too little breath support [*energy*]. _____ the larynx and throat frees the vibrato. If too much vibrato interferes with choral sound, encourage “_____,” one that is simpler and not as soloistic. [*Consider variety: more normal throughout “churning” of phrases, more “simple” for tuning of cadences.*]

See how to experiment with different “ages” while singing, baby-age through senior citizen to explore different intensities and timbres.

p. 116. Female Vocal Stages.

Gackle (1991): Model for Classifying Characteristic Stages of Development

Note: The female stages of voice change begin earlier than the male, and the female voice settles more quickly into an adult model.

Stage 1. Prepubertal.

Age: 8-10 (can occur as late as 11-13) years
Vocal quality: light, "flutelike" singing between upper and lower ranges achieved w/ease
Range: b-flat to f2 (octave and a fifth)

Stage 2A. Pubescent/Premenarcheal

Age: 11-12 (13) years
Vocal quality: breathiness; trouble singing in lower register; volume in middle and upper ranges is difficult to achieve; voice "cracks" (registers develop) are common.
Ranges: a to g2 (octave and a seventh)

Stage 2B. Puberty/Postmenarcheal

Age: 13-14 (15) years
Vocal quality: huskiness or heaviness in the vocal timbre; a five- or six-note range is most comfortable to sing; lower tones of the vocal range are easiest to produce
Range: a to f2 (octave and sixth)

Stage 3. Young Adults Female/Postmenarcheal

Age: 14-15 (16) years
Vocal quality: inconsistent sound; voice "cracking" common; breathiness decreases; great consistency between registers; richer tone; gradual appearance of vibrato; overall increases in volume, resonance, and agility
Range: a to a2 (two octaves)

p. 117. Female Vocal Instruction. Girls' tone quality and pitch are improved through systematic instruction in breath management, resonance, and vowel unification. Instruction does _____ significantly improve the breath quality of singing. Also address areas of posture. "...[B]reathiness in the adolescent female voice may be helped with instruction that increases phonatory efficiency." For example, "Students imitate the sound of a _____ phonating ba-a-a-a, using firm contraction of the abdominal muscles while emitting short, light grips of the vocal folds. If the girl cannot make a firm glottal closure, she may be at the peak of her voice change, when only time will heal the congestion of the intrinsic laryngeal muscles.

p. 118. Sustained Bleat exercise can be followed immediately by a sustained pitch in mid-voice. Glottal _____ for singing must come from the flow of air through the vocal folds, and not by pressing the folds together ("_____ of the glottis" not "_____ of the glottis"). *[Read this paragraph carefully before attempting this exercise. Important to do this right!]*

Alderson: *Complete Handbook of Voice Training* (1979) suggests:

1. Breathing exercises.
2. Humming, ringing quality.
3. Light approach.
4. Practice in the upper range.

Alderson also recommends:

1. Choose songs to explore the _____ registers;
2. Have girls singing neither too high nor too low for very long;
3. Avoid vocalizing on closed vowels such as oo; *[except to help focus middle voice!]*
4. Vary the dynamics.

Use frequent _____ to place each girl in proper choral section for good choral balance and blend, as well as the obligation to treat each singer as an individual.

p. 119. Girls' voices can be harmed by:

1. Demanding loud singing for _____ periods of time;
2. Requiring that pitches be sustained for too _____ a duration;
3. Seeking too _____ a mouth opening resulting in a stiff jaw;
4. Encouraging _____ soft singing, resulting in a weak, lifeless, out-of-tune sound.

Protect the voices under your care, especially the young!

p. 119. Female Vocal Registers. Registers remain basically the same as for prepubertal children. _____ voice begins at middle C and extends lower as voice matures. _____ voice similar to a child (*and adult!*): a sharing of the lower and upper registers. Traditional treble "break" between chest and upper registers (approx. a1 for untrained singers) does not exist with proper _____ of lower and upper registers. Pure upper voice begins around c2 and extends upward to c3.

Females with limited ranges, who can sing neither first soprano nor second alto, are the _____. This comes from _____ of development of the chest and upper registers and the inefficient sharing of registers in the middle. All females (including altos) should perform vocalises in a _____ manner from c2 to c3. Use exercises that _____ and strengthen the upper voice. In a similar way, "[t]he chest voice is a _____ part of the female singer's vocal range and should be so conceived and developed." Exercising the _____ vocal mechanism helps to build a total voice that is healthy and _____.

The chest voice does present a problem in female singing when its use is permitted in its _____ form above middle C. The _____ this chest quality is carried, the more _____ and obvious the transition becomes and the more _____ the voice sounds. Exclusive use of the chest register above middle C is potentially _____ to the vocal folds.

p. 120-121. Female Vocal Ranges. Very helpful examples are given to consider when choosing song literature. Remember: tessituras represent the _____ zones in which the majority of pitches should fall. Junior high generally refers to 7th and 8th graders, though 9th-grade ranges can overlap. Regarding voice classification: remember "the voice is yet unsettled; don't label girls altos or even mezzo sopranos until the ninth grade. All girls should be vocalized from b-flat to f2, with a song tessitura of d1 to d2."

- Junior High Treble I and II (male and female)
- Senior High Soprano I
- Senior High Soprano II
- Senior High Alto I
- Senior High Alto II

p. 121. More Than a Voice Change. The female is just as likely as the male to "get lost" during adolescence.

p. 122. THE ADOLESCENT MALE VOICE.

p. 122. To Sing or Not to Sing? Read about the personal aspects of males singing in adolescence. [*Gentlemen in the class, what was your experience?*]

p. 123. Male Voice Change. Brought about by hormonal changes in the body. May begin as early as 4th grade, but more often starts in 7th grade (c. 12 years old); it is known to _____ in 8th grade. Physiological indicators include:

- growth spurt,
- physical awkwardness,
- development of sex organs,
- growth of a mustache (peach fuzz) and other body hair,
- facial blemishes.

A change in the _____ voice is a sure indicator that change is taking place, especially in the thickening and growth of the larynx. Boy about to enter the voice change often displays a greater _____ and power in both speaking and singing. Noticeable changes in speaking can include a temporary loss of control, or “ _____,” and a heavy or _____ quality. Pubertal change brings about change in vocal folds: an increase in _____ and _____. Vocal folds in both sexes reach essentially their adult length by puberty; however, the absolute length of the male vocal folds increases by over two times that of the female. This overt increase (c. _____ millimeters) accounts for the _____ register drop between the voice of a boy and that of an adult male. Also accounts for the anterior (front) protrusion of the male larynx at the _____, or what is popularly called the “Adam’s apple.”

Voices of boys change at _____ rates. Some never seem to experience a voice break. Their voices change slowly, often developing into adult tenors. Other experience a fast change; these often become adult basses.

p. 124. Read about specific changes in block quote. Change *will* happen – it is a fact of life.

p. 124. Male Vocal Registers. *A knowledge of proper vocal registration is the key to understanding the male changing-voice process.*

The adult male sing predominantly in _____ registers, the _____ (TA-dominant, or chest, voice) approximately middle C downward two octaves, and a _____ register (CT/TA mix, or upper, voice) in the top octave of his range, middle C to c2 (Ex. 5.7). This upper voice involves a “ _____” (*passaggio*) from middle C to approximately f1 in which the CT/TA mix is heavier on the TA side, and a “head” voice (not to be confused with the _____ head voice) from g1 to high C (c2), in which the CT/TA mix is heavier on the CT side. Both registers (CT and TA) share equally in pitch production at approximately f#1. Above this pitch, the CT-dominant register gains prominence as pitch ascends.

[Excellent discussion, pp. 124-128. Read and digest. Then remember this for later, when you really begin working with these voices, and read it again. Best to learn this by doing it, which you will definitely do if/when you teach on this level!!!]

p. 125. Possible for adult male to sing in upper octave (middle C to c2) using pure upper register (CT-dominant, _____, mistakenly called falsetto), but generally not recognized as “legitimate,” except for some types of choral or pop singing. It has great use, however, in developing the head-voice quality.

Upon entering puberty, male voice expands _____ in range, some _____, some _____. Maturity rates/speed of physiological developments vary according to _____. Phillips [block quote] recommends: in early stages, cultivate only _____ registers: upper (male alto) and lower (chest). Boys can be taught to shift at e1. Once done, the top voice, well-supported, will begin to take on the quality of the true male *passaggio*, which is different from boy’s mixed voice. Once the realignment of the vocal

registers take place, the true tenor head voice (fuller and more resonant than the male alto sound) can be developed in the late- or post-high-school years. Herman (1988): vocalizing adolescent boys in the upper register (CT/male alto) is the secret to developing the high school tenor.

Adolescent male can no longer sing in what was his childhood middle voice (c1 to c2) with the same balance of CT/TA. Length and thickness of growing vocal folds disturbs _____; new *passaggio* and head-voice techniques must be eventually learned for this top register (c1 to c2). Until voice is _____ and a certain _____ is evident (senior high), this new *passaggio* register and head voice technique must be _____ in favor of a modified approach using only the pure upper (CT-dominant) voice from approximately e1 to c2. (Ex. 5-8) Continued use of the upper register through this range helps to maintain its _____. Later, it can be coordinated with the chest voice for a new _____ and head voice register (c1 to c2), which TKTS refers to as the “upper” voice.

p. 126. [*Falsetto semantics discussion.*]

Boys with changing voices fall into the same register trap that girls do: they sing everything in a _____ register. Adolescent boys singing below middle C can carry their unchanged mixed-register quality into the chest-voice range (middle C and lower). This results in a rather weak and undefined sound—neither man nor boy. Males with changing voices should be taught to _____ the lower (TA-dominant) chest register and to use it for the lower 2/3s of the male vocal range (great C to middle C). Unfortunately, many boys do _____ know that it is possible to sing in this chest register. [*Read anecdote in block quote.*]

Boys with changing voices are _____ limited to a small vocal range. They _____ significantly increase their ranges, upper and lower, when they use both CT-dominant and TA-dominant vocal registers.

p. 127. Cambiata: “[a] boy singing in the ‘cambiata’ classification with a production based primarily on the upper register, or his ‘_____ voice,’ will be _____ with the very change which is taking place.” Boys with changing voices must be taught how to engage the chest register. See TKTS “Lower Wheelie” exercise.

At any given time, boys may have a “_____” where no pitches sound in a particular range, especially quick changers. Work on this register issue from the _____, and the gap will eventually _____. Continue to exercise all registers as they are able. The adolescent tenor begins to emerge in the ninth grade. If upper voice has been actively maintained and exercised, the true *passaggio* (incremental sharing of registers) begins at approximately middle C. (Ex. 5.9) Difficult technique to master, requiring a “_____” quality accomplished through _____ the larynx and _____ the vowel vestibule (i.e., production of a “_____ [or focused] vowel” [[u] or [i]]. “All transitions into the upper voice by the male singer are made with a closed vowel. The _____ vowels [u] and [o] and central [ʌ] are vowels that make this transition automatic.” Tenors must have a good vocal teacher to learn this technique.

p. 128. [*Read more about developing tenor voices and not pushing too far too fast – be safe!!*]

Mature basses and baritones also need to develop a _____ if they are to learn to sing in tune and without strain above _____. For the bass, the incremental sharing of registers begins at approximately pitch f. The baritone begins to “_____” the upper register at approximately pitch g. (Ex. 5.10) Basses should be expected to sing in this *passaggio* register as high as e1; baritones can be expected to sing as high as f1 or g1.

Review the work of Henry Leck, founder and director of the Indianapolis Children’s Choir, one of the largest children’s choir programs in the world. Young men take the “high road” in vocal registration.

p. 129. Male Vocal Ranges and Tessituras. Given for consideration when choosing song literature. As with the female information earlier, _____ represent the comfort zones in which the majority of pitches should fall. Junior High – 7th and 8th graders, although 9th can overlap junior and senior high school. “Continual monitoring of the vocal compass is needed throughout the adolescent experience . . . labeling voices too early in students’ singing experience may result in voices that are limited in range and confidence.”

Junior High Male Vocal Ranges and Tessituras

- Junior High Tenor I (Unchanged Voice)
- Junior High Tenor II (Changing Voice)
- Junior High Tenor (Newly Changed Voice)
- Junior High Baritone (Newly Changed Voice)
- Junior High Bass (Newly Settled Voice)
- Junior High Bass-Baritone (Newly Changed).

p. 132. Summary of Seventh- and Eighth-Grade Male Vocal Ranges and Tessituras

<i>Vocal Part</i>	<i>Range</i>	<i>Tessitura</i>
Tenor I (unchanged)	b-flat to f2	d1 to d2
Tenor II (changing)	g to c2	a to a1
Baritone (newly changed)	C to g1	d to d1
Bass-Baritone (newly settled)	G to c1	A to a

Senior High Male Vocal Registers and Tessituras

- Senior High Tenor I
- Senior High Tenor II
- Senior High Baritone
- Senior High Bass

p. 133. Male Vocal Quality. Adolescent boys are capable of greater _____ and _____ if they learn to energize the _____ vocal instrument. *[Read block quote on how to explore this.]* Young adolescent male is going to have a rather light voice with a husky or breathy quality. Greater depth and resonance will occur with good vocal instruction over time. _____ singing during early adolescent years produces a _____ quality. Better to maintain levels between *mp* and *mf*. *[Not too loud or too soft. Why?]* When the voice is relaxed and well supported, the vocal _____ (a product of intermittent nerve energy) appears in the voice. Non-vibrato in pop singers: sign of throat _____. Vocal vibrato is a sign of _____ vocal technique. *[Product of freely functioning voice!]*

p. 134. Male Vocal Instruction. TKTS works for elementary students and adolescents, however, challenges presented by the changing voice make the process of instruction somewhat more _____ (e.g., boys may not have certain pitches on any given day).

_____ - _____ approach advocated by Sally Herman (1988) is recommended. Pivot voice to another part when specific notes don’t work. Use quality multi-voice literature where male voices sing a combination of voice parts according to present vocal ranges. This requires knowing, and keeping a record of, the range for each male singer throughout the voice-change process.

Herman classifies voices as: first tenor, second tenor, baritone, bass (not to be confused with adult or changed voice counterparts). Second tenors and baritones be _____ close to sopranos so they can sing soprano part down an octave. First tenors and basses are seated close to

the _____. In two-part music, the first tenors sing the alto part as written, and the basses sing the alto part on octave lower.

Adolescent boys who have the most difficulty matching pitch are those whose voices changed at an early age or changed _____. These singers may have only a 3- or 4-note range in the lower register and _____ in the middle range. Assure these singers that this is normal; work their from voices _____ from the top. Have “male singers sing in the soprano range to develop _____ and head voice.” Participation in glee clubs is recommended to stimulate interest in singing and help them with unique issues related to voice change.

p. 135. Read about Frederick Swanson and his theory on voice mutation and how to deal with it. Consider term, “bass-clef chorus.”

p. 136. A **Final Word** is a helpful (and very brief) summary.

PART II: VOCAL PHYSIOLOGY

Vocal Pedagogy depends upon scientific evidence scientifically expressed.

– Ralph Appelman

Chapter 6: Breathing and Laryngeal Mechanics

p. 143. THE BREATH.

This is the intersection of science and art. *[To be a successful mechanic, you have to know the parts of the engine and how the engine works. . . with specificity, exactness, and accuracy!]* The “life” of all singing; brings *energy* to the tone. The basic foundation upon which good singing is developed. *[The motor of the singing voice!]* Most children begin to breathe incorrectly as early as the primary years. Chest heaving and collarbone (clavicular) breathing soon become the norm.

p. 144. While teaching breathing can be highly subjective, TKTS (*and ACT*) represent an approach taught by leading vocal instructors and one substantiated by research. TKTS recommends that breathing instruction begin for children in second grade (age 8).

Three major muscle groups to consider and the ways in which these muscles function and interact: abdominal, diaphragmatic, and costal.

Breathing Motion. Two phases: inhalation [*inspiration*] and exhalation [*expiration*]. Can be done into two ways (bimodal):

(1) use the intercostal muscles between the ribs to lift and lower the chest quickly for a fast breathing cycle, or

(2) contract the thereby lower the diaphragm upon inhalation, slowly relaxing it upward upon exhalation.

p. 145. (2) is the preferred type: a combination using the abdominal, diaphragmatic, and costal muscles that the singer needs to learn for optimum breath management. (1) is fast paced and comes naturally; (2) is controlled and managed, not as natural, and must be practiced to become habitual. Children need to learn proper respiration (inhalation-exhalation). Clavicular breathing is too shallow; rather, children should be instructed to take “full” or “deep” breaths in a “controlled” and “managed” way. [*Expand downward and outward; “Invite” the air into the lungs; no gasping or heaving; lungs are organs, not muscles, so their should not be a muscular feeling of “pull” in the upper chest when inhaling.*] (see Fig. 6-1)

p. 146.

Inhalation: The diaphragm descends (contracts) and the lower ribs expand outward, with a corresponding enlargement of the body around the waistline permitted by relaxed abdominal muscles.

Exhalation: The diaphragm ascends (relaxes) [*called "elastic recoil"*] and the lower ribs contract inward, with a corresponding contraction of the body around the waistline as a result of contracting abdominal muscles.

Breathing Physiology. The lungs are primary organs that depend on the surrounding muscles for their expansion and contraction during the breathing cycle. The rib cage protects the lungs from puncture. Ribs (or costae) are attached to the spine, the lower end is fused to the pelvis. The upper ribs connect with the breastbone, or sternum, via the costal cartilages. The ribs move forward and upward with the sternum in a pump-handle fashion. The clavicles, or collarbones, are attached to the top of the sternum and to the shoulder blades on each side of the body. (See Fig. 6-2)

The diaphragm (Fig. 6-3) is the major muscles of inhalation. It is double-domed shape (right slightly higher than left) and serves to separate the thoracic cavity from the abdominal cavity. It is thin and attaches to the lumbar (back) vertebrae, the costal (rib) margin, and the lower end of the sternum.

When diaphragm is contracted for inhalation, back part of central tendon is drawn downward and forward, compressing the abdominal organs (viscera). Downward movement results in sudden decrease in atmospheric pressure brought about by the increased room in the pleural (lung) cavity. Air is drawn into the lungs [*invited!*] to balance the pressure inside the lungs with the greater atmospheric pressure outside the body. It is not the air that pushes the diaphragm downward, but rather the diaphragm draws the air into the lungs when its action results in lowered air pressure within the pleural cavity.

Compression of abdominal area by lowered diaphragm increases circumference waistline. Trouble for adolescent girls [*and everyone, really*] who fear looking "fat." This can be avoided by standing tall and maintaining good posture, which elevates the rib cage allowing more room for compression of the organs within the abdomen. In order for diaphragm to work properly, the abdominal muscles must be relaxed. Contracting them does not permit diaphragm to contract and descend during inhalation.

p. 148. Quiet breathing vs. deep breathing necessary for singing. Because diaphragm is an involuntary muscle (i.e., one that acts on its own), one should not try to control it consciously one the proper breathing motion has been established. Breathing from diaphragm is natural breathing, however, tendency to breathe from the upper chest w/o diaphragmatic descent is common. Low, diaphragmatic breathing also is conducive to good health (e.g., yoga) and various forms of meditation.

p. 149. External intercostal muscles (between ribs, slanted diagonally downward from backbone) help with inhalation. (Fig. 6-3) Contraction brings rib cage upward to allow for expansion of thoracic cavity and, acting together with diaphragm, serve as two basic muscle sources for inhalation phase. Internal intercostal muscles (between ribs and beneath external intercostals) pull the rib inward and downward, contracting the thoracic cage and producing exhalation. As the back muscles are primarily postural, they make breathing possible by providing a base for the muscles of respiration.

Breath Management (Support and Control). Quiet breathing, forces of respiration are passive, but for singing, these forces must be controlled and managed way: (1) support and control of forced [*and elongated*] exhalation; (2) inhalation process more active to increase diaphragmatic descent and expansion of ribs. Breath support [*"breath energy" is preferred term*] produces an energized air

column – the power behind the act of singing. Origin: contraction of abdominals and muscles in lower back. Inhalation: abdominals relax, allowing lungs to be infused deeply with air. Exhalation: abdominals contract upward and inward against the abdominal viscera and diaphragm, creating an internal pressure and energized air column that should be constant and balanced. Feeling of expansion around entire waistline is essential to proper inhalation, which is countered by the already elevated sternum and expanded rib cage. “We expand to breathe; we do not breathe to expand.” Abdominals are major source of power in breath support.

p. 150. Breath control is the slow emission of the energized air column. Major muscle of control is diaphragm; as it relaxes, slowly counteracts internal pressure created by contraction of abdominals. “Balanced resistance” between abdominals and slowly relaxing diaphragm is helped by external intercostals, which continue to hold ribs out during exhalation. By maintaining a smooth application of abdominal muscles up and against the diaphragm, steady stream of pressurized breath creates constant subglottal (below glottis) pressure against the vocal folds. Result: steady pitch.

Diaphragm is involuntary muscle. By maintaining a full, upright posture for singing, lower rib line does not collapse, which allows for slow, upward relaxation of the diaphragm. Outward expansion of rib cage holds back the diaphragm from relaxing too quickly. This allows for indirect control of the diaphragm, which is crucial for good breath management.

p. 151. The amount of air (vital capacity) is not nearly as important as how the air column is supported and controlled. It is not how much air a person is able to breathe but how a singer manages the exhaled air [*in relation to the pitch that is phonated and the resonating spaces that are created*] that matters most. Process of control and support is aided by intercostals. At vocal onset: rib cage should be held out [*high sternum, relaxed shoulders and arms*] to keep from overloading the voice with too much air. The diaphragm must always relax and ascend slowly for singing; any attempt to hold the diaphragm causes unwanted tension in the throat. Diaphragm must be allowed to ascend on phonation and ascend naturally (involuntarily) through maintenance of good posture.

Appoggio. TKTS advocates breath support using the expanded rib cage and light abdominal contraction. Vigorous pushing or pulling of the abdominal muscles is not recommended. The rate of relaxation of the diaphragm can be controlled, not through conscious manipulation of the diaphragm but through an elevated sternum and expansive lower rib line, to which the border of the diaphragm is attached. The sternum remains comfortably high. International Italianate appoggio technique:

In “appoggio” technique, the sternum must initially find a moderately high position; this position is then retained throughout the inspiration-expiration cycle. Shoulder are relaxed, but the sternum never slumps. Because the ribs are attached to the sternum, sternal pressure in part determines diaphragmatic position. If the sternum lowers, the ribs cannot maintain an expanded position, and the diaphragm must ascend more rapidly. Both the epigastric and umbilical regions should be stabilized so that a feeling of internal-external muscular balance is present. This sensation directly influences the diaphragm. [Miller, 1986, p. 24]

Remember: abdominal-diaphragmatic-costal interaction. Elevated sternum, maintaining shoulders that are “back” and “down.” Lower ribs and intercostals work together with diaphragmatic, abdominal, and back muscles to coordinate a natural support-and-control process.

p. 152. THE VOICE.

The act of phonation centers in the human larynx (“lair-inks,” not “lar-nix;” [*think “Larry the Larynx!”*]) which sits on top of the trachea (wind pipe) to provide a passageway for respiration and

to create sound vibrations. Sensitive and delicate protective area for vocal folds (or cords, but never chords!!).

p. 153. Larynx can move up and down for various purposes: clearing the throat or swallowing causes it to rise; yawning causes it to lower. Avoid raising it or pressing it lower than normal (“at rest” position) when phonating. Maintain “at rest” position for both speaking and singing. Vocal folds are small (c. diameter of a dime) and these two “sound generators” alternately close and open from air passing between them upon exhalation. Vibrations generate energy in form of complex sound waves, which travel through the air and are perceived as sound in the form of both pitch and quality. Rate of vibration expressed as “cycles per second” (cps) or “hertz” (HZ). In addition to fundamental pitch, vocal folds also produce a series of “overtones,” or higher-frequency pitches that add resonance to the fundamental (octave, fifth, fourth, major third, etc.). In the voice, overtones are called “formants,” or frequency “regions” that are not fixed frequencies, as are the overtones produced by musical instruments. Each region is a width of frequencies, which permits different voices to blend on any vowel as long as the vowel is shaped in the vocal tract within the range of formant frequencies for that vowel. *[In other words, vowels have pitch!!]* When there is too much variation (e.g., some people singing “ah” and others “uh”), the formant frequencies “beat” against each other and cause the pitch to sound out of tune. Overtones and formants progressively decrease in energy the higher they become. Fundamental frequency generates the most energy and is heard as pitch.

Vocal Registers. Discussed fully in previous chapters. Folds vibrate on their thin, inner edges (CT) when producing an upper voice, or across the full width (TA) when producing a lower voice. TKTS approach to phonation is the three register approach (upper, middle, lower). Etc., etc.

p 155. The cultivation of the lower voice should not be omitted from voice study, as a properly produced (unforced) lower sound is basic to the speaking voice and proper phonation. Using the two registers (upper and lower) separately and in combination is the core of the vocal method in TKTS. Remember Edwin in previous chapters: believes in “healthy belting” and recommends that singers benefit from some “cross-training” work. Adolescents with changing and changed voices are encouraged to exercise both lower and upper registers separately and together. Boys do not lose the capacity to sing in the upper register during voice change. Phonation exercises in the pure upper voice help adolescent boys find and strengthen the singing range between middle C and c2. Exercises in the lower range help to establish and strengthen emerging lower speaking voices.

p. 156. LARYNGEAL PHYSIOLOGY.

You should have rudimentary knowledge of basic sound-producing actions of the larynx, the various cartilages, ligaments, and muscles, and how they all work together to produce sound. *[Again, the mechanic (teacher) must know the car (voice)!]*

The Cartilages. (Fig. 6-4)

(1) Thyroid cartilage: largest of the larynx; shape and size protects other parts from damage; front is “thyroid notch” or “Adam’s apple;” attached to the cricoid cartilage; hinge-like interaction between thyroid and cricoid allows a certain degree of movement *[rocking]* while being attached.

(2) Cricoid cartilage: forms a ring that sits on and is attached to the top of the trachea; surrounded anteriorly (front) by the thyroid; wider and taller posteriorly (rear), giving the appearance of a signet ring.

(3) Arytenoid cartilages: pyramidal in shape and located posteriorly on the top of the cricoid cartilage; both rotate and slide from side to side or forward and backward on the cricoid; posterior ends of the vocal folds are attached to these cartilages.

(4) Epiglottis: cartilage that closes off the larynx during swallowing; resembles the tongue of a shoe; attached at its lower end to the inside of thyroid cartilage (just below notch) and at its upper end by a ligament to the hyoid bone.

p. 158. The Hyoid Bone. (Fig. 6-4) Only bone of the larynx; located at the top of the laryngeal structure and attached to the thyroid cartilage by a membrane and the superior cornu; uniquely not attached to another bone of the skeletal system; serves as a positioning regulator of the larynx (along with numerous muscles), allowing larynx to move upward or downward to accommodate yawning, swallowing, clearing, etc.

The Intrinsic Muscles of the Larynx. (Fig. 6-5 and 6-6) Part of the laryngeal structure and either govern pitch production or open and close the vocal folds. Two important sets of muscles that govern pitch production are the cricothyroid (CT) muscles and thyroarytenoid (TA) muscles.

(1) Cricothyroid (CT) Muscles (vertical and oblique) are attached to the anterior base of the cricoid and extend upward to the lower border of the thyroid; primarily pitch-control muscles, lengthening and tensing the vocal folds causing the pitch to rise (Fig. 6.5). When the CT muscles contract, the front of the cricoid rises and the rear portion tilts backward, causing the vocal folds to become thinner and increase in tension (Fig. 6-6). This action produces the upper (CT) register.

(2) Thyroarytenoid (TA) muscles located within the vocal folds and are attached (as part of the vocal folds) anteriorly at the base of the thyroid notch (Adam's apple) and posteriorly to the arytenoids (Fig. 6.5). Contraction of these muscles causes the folds to shorten and thicken, thus lowering the pitch. This reverses the action of the cricothyroid muscles and produces the lower (TA) register.

(3) Lateral cricoarytenoid muscles are attached from the cricoid arch and extend laterally, attaching to the arytenoid cartilages (Fig. 6.5) and, upon contraction, hold the vocal folds together (adduction).

(4) Interarytenoid muscles (transverse and oblique) attach between the arytenoid cartilages and, upon contraction, hold the vocal folds together. They are aided by the cricothyroid muscles (lateral portion) and the lateral cricoarytenoid muscles.

(5) Posterior cricoarytenoid muscles are attached at the back of the cricoid and extend upward to the arytenoids (Fig. 6.5) Contraction of these muscles moves the vocal folds apart (abduction) for normal respiration. In this position, the opening between the two vocal folds is called the glottis.

P. 160. The Extrinsic Muscles of the Larynx. (Fig. 6-7) Located outside the larynx itself, but are attached between it and some other part of the anatomy. These swallowing muscles, when contracted, govern the movement of the larynx and should not be used directly in the singing process; source of much vocal tract tension.

(1) Infrahyoid muscles (strap muscles) anchor the larynx from the hyoid bone downward; help to lower the larynx (yawning) or raise the larynx (swallowing).

(2) Sternothyroid muscles attach to the sternum and thyroid cartilage; contraction helps to lower the thyroid cartilage of the larynx.

(3) Omohyoid muscles attach to the hyoid bone and to the shoulder blades; contraction helps to lower the hyoid bone and the larynx.

(4) Thyrohyoid muscles attach to the thyroid cartilage and the hyoid bone; contraction raises the thyroid cartilage and lowers the hyoid bone, as for swallowing.

(5) Suprahyoid muscles anchor the larynx from the hyoid bone upward; raise the larynx when contracted.

(6) Digastric muscles are located in the sides of the lower jaw, attaching jaw to the hyoid bone.

(7) Stylohyoid muscles are located in the sides of the neck, attaching to the styloid process and to the hyoid bone.

(8) Mylohyoid muscles are triangular and form a muscular floor for the cavity of the mouth; attach to the front of the jaw and to the hyoid bone.

(9) Geniohyoid muscles lie just above the mylohyoid muscles in the floor of the jaw and attach to the front line of the jaw and to the hyoid bone.

As stated previously, the suprahyoid (above the hyoid bone) muscles raise the hyoid bone/larynx for swallowing and should not be employed for singing. *[These are called “false elevators” and must be DEACTIVATED!!]*

P.161. The Open Throat. All must be taught to maintain an open throat for speaking and for singing. *[This is why it’s so important to “breathe through a vowel” when initiating the breath for singing and to keep your “spaces spacious” when singing! Simply telling someone to “open your throat” is not effective.]* A rigid or trembling tongue, tight jaw, and elevated larynx signal a constricted throat.

p. 162. The Vocal Folds. (Fig. 6.9) The two vocal folds are the source of vibrations for vocal sound. They are pyramidal in shape, quite small, and capable of rapid changes of thickness, length, and tension. When brought together for phonation, the pressure of the expired air forces the folds apart; almost immediately the mechanical properties of the folds and the air passing between them draws the folds together (Bernoulli effect). When the inner portions of the vocal folds vibrate, the upper voice (CT) is produced. As the folds shorten with the contraction of the TA muscles, the vibrations spread laterally to include more of the fold, and the pitch is lowered. When the full width of the vocal folds is set into vibration, the lower, or chest, voice is produced. Opening between the vocal folds when at rest or quiet breathing is known as the glottis. Bringing folds together at beginning of phonation is called “stroke of the glottis,” whereas locking folds together before producing a sound with a force of air is called “shock of the glottis” (hard glottal attack). Latter is not desirable.

The ventricular bands, or “false vocal folds,” lie above the true vocal folds and attach to the inside of the thyroid cartilage anteriorly, and the arytenoid cartilages, posteriorly. Contain only a few muscle fibers and should not contract during phonation; purpose is to protect the true folds from foreign matter (phlegm) and to close for heavy lifting or exertion.

The vocal folds are delicate organs and must be protected from abuse; harsh coughing and clearing of the throat are to be avoided. Read Chapter 8 on maintaining a healthy voice!!

Chapter 7: Resonator and Articulator Mechanics

p. 167. A beautiful voice is rich in resonance, characterized as having uniformity of vowels, depth and fullness of tone, and projection, or “ring.”

RESONANT TONE PRODUCTION.

Energy is generated from the vocal folds in the form of a complex sound wave, which travels through the pharynx (throat) and out of the oral cavity (mouth), resulting in a loss of energy. The vocal tract has acoustic properties apart from the pitch and harmonics produced by the vocal folds.

p. 167. Formants. Formants (F) are resonance frequencies of the vocal tract. Not to be confused with fundamental frequency (f), which is the pitch heard (c.p.s. or Hz.). Every sound of the human voice is a combination of fundamental frequency and formant frequency.

[“Fixed” vs. “Variable” (“Tunable”) Formants] In general, the overtone or harmonic series of any instrument is a fixed set of frequencies above the fundamental, which, when dampened or strengthened by the shape and size of the instrument, determines the tone quality (timbre) and resonance of the instrument. Formants of the voice are similar to overtones, except that formants are not fixed. Think of them more accurately as frequency “regions,” or bands of frequencies. These regions can be changed (lowered or raised) according to the configuration of the vocal tract. Ability to change vocal tract distinguishes human voice; vocal tract is capable of countless changes (e.g., movement of the articulators (tongue, lips, palate, jaw, etc.) that result in a variety of vowel sounds, consonants, and resonances that are called language. Instruments produce fundamental pitches and a fixed set of overtones (octave, fifth, fourth, major third, etc.), whereas voices produce fundamental pitches and accompanying formant regions that can be varied *[tuned]* by the changes in the articulators.

pp. 167-173. Vowel Production. Vowels form the basis of resonant tone production. *[Vowels have pitch! They account for 99% of the sung sound.]* Individual vowels may have from five to thirty formants, although the first four (lowest) are the most important to vowel identity and quality. The lower two formants (F1 and F2) provide most of the identity of the vowel, enabling the listener to distinguish one vowel from another.

The average male vocal tract (a uniform vocal tract, or perfect cylinder, closed at the glottis and open at the lips) is 17.5 centimeters long. The shorter vocal tracts of women and children shift all vowel frequencies 17% and 25% higher, respectively. Longer vocal tracts, as in the deep bass voice, shift all formant frequencies lower.

Each vowel is determined by its own arrangement of formant frequencies (see Fig. 7.4). Vowel formants must be tuned so as to achieve the most resonant sound and in-tune singing. Poor speech habits become poor singing habits. Students need to understand that there is singing diction distinct from speaking diction. Sung vowels are often elongated and given different stress than for speech. Five primary vowels in the English language: a, e, i, o, u. Italian enunciation is used in vocalization and vocalises. See Vowel Color Chart (Fig. 7.5) Students tend to sing all vowels with a rather small, narrow, and horizontal (east-west) mouth opening. Resonance suffers. Encourage tall, vertical production for all vowels. The old “two fingers in the mouth” technique provides an example of how far mouth can open for singing diction. Actually, it is not as important to open the mouth wide as it is to drop the jaw from the rear (at the hinge). Imaging a round, candy jawbreaker resting at the rear of the tongue is one way to help students feel the open throat position. Also, use horizontal or vertical hand sign to remind students of east-west vs. north-south. Uniformity of vowels is a major objective of resonant tone production. TKTS approaches all vowels with a vertical, flared position of the lips, with the lips extended slightly forward as for the [u] vowel. *[“Fish lips with rabbit teeth!” – Frauke Haasemann, Westminster Choir College.]* With jaw relaxed, swallowing muscles will not trigger raised larynx. Flared lips make mouthy, thin sound less likely, because the vocal tract is lengthened, thus lowering the vowel formants. Lowered formants produce a slightly darker, more mature sound. Flared lips also counter spread vowels. Fuller, richer vocal resonance depends upon a longer, open tract with jaw relaxed, larynx at rest, and lips slightly forward for all vowels.

pp. 173-175. Resonator Physiology. Pharynx and mouth are the major resonators of the voice, but not the only ones. Chest cavity, larynx, nasal cavity, and sinuses do play some role, but most authorities state the contribution is minimal.

Pharynx: cavity above the larynx that extends upward behind the mouth and the nose (Fig. 7.8). Three parts: laryngopharynx (below tongue); the oropharynx (behind oral cavity and tongue); and the nasopharynx (above soft palate and behind nasal cavity). Nasopharynx can be closed off from the remainder of the pharynx by the arching of the soft palate. Soft palate must be “raised and arched” to maximize pharyngeal space and resonance. Sensation of stifled yawn (lips slightly touching) is recommended to help raise or arch the soft palate for singing. Movement of the soft palate is involuntary, so it is best not to call attention to it, especially with children, allowing it to take its natural placement when the pharynx is relaxed. Attempts are made to open and expand the pharynx through indirect techniques (e.g., Inner Smile and Cool Spot; *[breathe through an “ah” or “the space of the vowel you’re about to sing”]*).

pp. 175-176. The Tongue. Tongue gives shape to both the oral cavity and the pharynx. Carried too far back, it causes constriction of the pharynx and a loss of resonating space. Tip of the tongue should rest on the fleshy ridge at the base of the lower front teeth. Back of the tongue is to be kept forward and arched high enough to keep it out of the throat. (Fig. 7.9). Vowels [u], [i], and [e] have the highest positions for the back of the tongue. Vowels [o] and [a] progressively lower the tongue to the base of the mouth. The tongue must remain relaxed *[flexible and free]* for singing. Any rigidity causes constriction of the vocal tract and reduces vocal resonance *[, which is why lip bubbles and raspberries are so important!!]*.

Two muscles under the tongue, the geniohyoid and mylohyoid, connect base of the jaw to the hyoid bone (Fig. 7.9). Tension in these muscles elevates the hyoid bone, which elevates the larynx. Any tension or hardness in these muscles while singing is an indication that a partial swallowing action is being activated, which shortens the vocal tract and restricts openness of the pharynx. Massage tension away from these muscles with the thumbs while vocalizing. *[Deactivate these muscles!]*

p. 176. The Pharynx. Different uses of the pharynx between pop singers and trained classical voices.

p. 177. The Singer’s Formant. Professional voices (opera singers) need to project above an orchestral accompaniment. These singers (especially males) often develop an extra formant that increases the power of the voice and is produced in the average male vocal tract at a frequency of c. 2800 Hz. Origin of “singer’s formant” is theorized to be at the laryngeal level, when the larynx is down (at rest) and the opening of the larynx into the pharynx is at a ratio of 1:6. It is believed that the larynx must remain in a relatively low position for it to produce a formant capable of adding brilliant and substantial carrying power to the voice.

p. 177. DEVELOPING RESONANCE. In addition to uniform vowel position (vertical), two other characteristics of the resonant voice are depth (richness) and projection (ring), qualities that are developed through proper tuning of the vowel formants. The singer must learn to tune the vocal tract (adjust the articulators) to the frequency region of the lowest formant of any given vowel. The closer the fundamental pitch interacts with the formant frequency of any vowel, the clearer and more resonant the vowel and its pitch will sound. In the end, it is the ear of the music instructor that must determine the correct sound for each voice. *[YOU must listen for optimal tuning of the formants and be able to instruct your students on how to tune them better! Listen for the QUALITY of resonance (depth and ring) and be sensitive to INTONATION for sign. As their skills develop in doing this, it will become easier: they’ll feel the difference when it’s right. Another benefit, if all other aspects of singing are working well, will be the emergence of a vibrato (the product of a freely functioning (and formant-tuned!) voice!]* Young children produce a quality that is bright, buoyant, and ringing.

As they mature, the vocal tract lengthens, permitting even more depth of resonance through increased lower formants.

p. 180. Instrumentation in Resonance Analysis. Read up on the latest technology that presents sound/resonance analysis on devices. Really fascinating to explore, if you have the time.

p. 181. Vowel Modification. Difficult to sing pure vowels throughout the vocal range, especially on pitches above f2 in adult female voices and f1 in adult male voices. Problem when the frequency of the sung fundamental is higher than the first formant. Sopranos and Tenors: the higher they sing the more the jaw must open if vowel integrity is to be maintained. When the fundamental pitch frequency is lower than the first formant of any vowel, the vowel integrity is maintained. Most pitches in the adult male vocal range are below the first formant of all vowels. As pitch rises above f1, however, the formants of some vowels fall below the fundamental frequency, necessitating vowel modification similar to that used with female voices. Fortunately, formant frequencies of children's voices are so much higher than those of adults that vowel modification is not a problem.

p. 182. Vocal Vibrato. Vocal vibrato is heard as a slight undulation of pitch at between 5 and 6 cycles per second (cps). Numerous theories as to source(s) of vibrato: good breath management and a relaxed throat seem to be essential. In Western culture, vibrato is considered a mark of a beautiful voice [*product of a freely functioning voice that doesn't draw attention to itself*]. Yes, children and adolescents can develop a natural vibrato through proper vocal production. What isn't a vibrato? Tremolo = too fast; Wobble = too slow. Both undesirable. Vibrato enhances vocal beauty and gives voice a certain luster; these two things interfere with the tone and corrupt its beauty. Source of wobble can be weakened abdominal musculature (lack of support) or tension in the laryngeal-pharyngeal areas. Tremolo can usually be traced to excessive tension of abdominals, which prevents them from relaxing sufficiently upon inhalation. Tension is transferred to vocal folds as "overdrive" of energy, causing speed of undulation to increase. Poor breath management is the caused of many vocal problems. Tremolo and wobble are vocal problems most often associated with older adult singers who have developed poor muscle tone in the abdominal region.

p. 182. ARTICULATOR PHYSIOLOGY. Eight articulators responsible for pronunciation of language:

1. Jaw
2. Tongue (lingual)
3. Teeth (dental)
4. Lips (labial)
5. Soft palate (velar)
6. Hard palate (palatal)
7. Upper gum line (alveolar ridge)
8. Glottis (space between the open vocal folds).

Student must learn to use these articulators efficiently if proper diction is to become habitual.

p. 183. Classifications. Vowels are classified according to the amount of jaw opening. Two classes:

1. Open Vowels [a], [o], [ɔ];
2. Closed Vowels [e], [i], and [u].

The closed vowels are particularly troublesome to singers, as they tend to be horizontal and thin in production. All practice of vowels should involve exercises for vertical mouth placement.

Vowels are also classified according to natural darkness or brightness. The "dark" long vowels are [u], [o], and [ɔ]. The "bright" long vowels are [i], [e], and [a]. All singing of vowels should involve exercises that balance darkness and brightness. [*La-be-da-me-ni-po-tu-la-be*].

p. 184. See physical-origin classification of consonants. Second classification is according to similarity of sounds, perhaps more useful for singers: voiced (carry a vocal buzz), tuned (carry pitch), and voiceless (do not carry pitch). Within these classification are subdivisions: plosives (explosive sound when articulators come together and interrupt breath); and the opposite, continuants (articulators briefly sustain the consonant on pitch). Third type is similants (stream of air passing between the teeth or between teeth and lips). Lastly, aspirates (silent stream of air at the glottis).

p. 185. DICTION FOR SINGING. Diction is the manner in which a language is spoken. Word intelligibility is a primary requirement for communicating lyrics, and beautiful tone quality is based on properly resonating vowels. [*Vowels = feeling; Consonants = intelligibility*] Singers must develop “singer’s diction.” Diction involves three areas: pronunciation (how a word is spoken), enunciation (how a vowel or syllable is spoken), and articulation (how a consonant is spoken).

p. 186. International Phonetic Alphabet (IPA). Study of diction is easier if students understand symbols associated with IPA.

p. 186. Rhythmic Diction versus Sung Speech. Interesting discussion: quite relevant! Know this!!!

p. 188. Singing in Foreign Languages. Yes, encourage it for students of all ages. Always provide a good translation and make sure they know it..

p. 188. Pronunciation Issues. VERY helpful list of 32 common pronunciation issues you’ll encounter often! Really good points and helpful “fixes.”

Chapter 8: The Healthy Voice

Straightforward material. Please review carefully on your own. Questions from this chapter WILL be on the Mid-Term and Final Exams.

Chapter 9: An Overview of the Method

p. 209. Rationale for Teaching Kids to Sing. See earlier chapters.

p. 210-211. The Revised Curriculum.

p. 212. Method vs. Approach.

- *Method*: well-defined, step-by-step process of instruction. TKTS curriculum: is a method, a sequential process of psychomotor skill development. In method form, takes students through systematic study of the voice according to exercises in Body, Breath, Ear, Voice, and Song.

- *Approach*: “picking and choosing” from the sequence of exercises rather than subscribing to a sequential plan. *[Or, better said, the sequential plan the authors suggests. Just because you’re “picking and choosing” doesn’t mean YOU don’t have a sequential plan, which you definitely should!!!]* “Whether using TKTS as a method or approach, instructors should lay a solid foundation for their students with exercises in Body and Breath.

Group Instruction. Evaluate students individually as much as possible by “sampling” voices (having students sing alone). Keep good records to monitor group progress and assess students as necessary.

- Each singing lesson must be an enjoyable activity. Descriptive titles of exercises help to identify (and remember) them. Don’t spend too much time on any one exercise and take a varied approach to classroom instruction. “Most importantly, *instructors should limit the amount of time for vocal instruction to no more than ten minutes, no matter how long the class. . . .* the pace of instruction should be quick, with little or no break between exercises. Teacher talk should be kept to a minimum to keep students actively engaged in singing process.”

pp. 213-221. Overview of Method. See specific goals and descriptions of each part of the method. *[This will come in SO handy later in your career, when you will need to provide specific objectives in formal lesson plans. Why re-invent the wheel?]*

Part 1: Energize the Body

- Physical Conditioning
- Posture Development

Part 2: Energize the Breath

- Breath Motion
- Breath Management

Part 3: Energize the Ear

- Aural Acuity
- Pitch Discrimination

Part 4: Energize the Voice

- Phonation
- Resonant Tone Production

Part 5: Energize the Song

- Diction
- Expression

p. 220. Singing Assessment.