1. Classification of Vocal Faults
There are several ways to classify vocal faults:
(i) according to the essential properties or elements of a musical sound (faults related to pitch, intensity, duration, timbre, sonance)
(ii) according to their relation to the physical processes involved in the singing act (faults related to respiration, phonation, resonation, articulation)
(iii) classification by the part of the vocal mechanism involved, (such as the faults of the tongue, jaw, lips, soft palate etc.)
(iv) by the area of vocal technique involved (faults related to range extension, registers, vibrato, flexibility, legato, dynamics)

For our intents and purposes we will explore the system related to the physical processes in the signing act.

Faults are grouped as hypofunction (where there is not enough activity of the mechanism involved), and hyperfunction (where there is too much activity, or too much tension – overuse)

Three questions teachers should ask of their students:
1. What is wrong with the sound I am hearing?
2. What is causing it to sound that way?
3. What am I going to do about it?

Recognize the symptoms: evaluate visible and audible clues.
Examples: (i) visible: postural rigidity, collapsed chest, tight jaw, furrowed brow, raised shoulders, tilted head, white knuckles, knees locked, shaking legs, heaving chest
(ii) audible: (a) breathiness, nasality, vibrato, intonation, hoarseness and volume level; (b) elements of vocal technique – such as flexibility, diction, legato, range, and evenness of scale, and (c) more imprecise terms used to describe tone quality and resonance.

2. A Basic Approach to Vocal Sound
Musical Tone has five characteristic properties or essential elements: duration, intensity, pitch, sonance, & timbre.
(i) duration: how long a musical tone lasts
(ii) Intensity: deals with the amount of energy, or strength, in the sound (objectively measured by its decibel level). Commonly known as ‘loudness’, although this is a subjective term.
(iii) Pitch: is the frequency of vibration of a musical tone as expressed in the number of vibrations per second.
(iv) Sonance and Timbre: are both essential characteristics of tone. Timbre means tone quality, tone color (Klangfarben in German). Sonance is the pattern of change in timbre, pitch, and intensity.

The act of producing a vocal sound is made up of four physical processes: respiration (breath is taken); phonation (sound is initiated in the larynx); resonation (the resonators received the sound and influence it), and; articulation (the articulators shape the sound into recognizable speech patterns through the muscular adjustments and movements of the speech organs.)
3. Posture
The body functions best when certain conditions exist. The main purpose of the hard framework (skeleton) is to support, protect, and give shape to the body. The main purpose of the muscles is to produce movement, and to assist in positioning the body.

The actuator (breath apparatus) of the vocal instrument functions best when certain conditions exist. (A sunken chest position will limit the capacity of the lungs, and a tense abdominal wall will inhibit the downward travel of the diaphragm.

The vibrating and resonating mechanism of the vocal instrument functions best when certain conditions exist (i.e. when there is proper alignment and the elimination of unnecessary tension).

The singer functions best when certain conditions exist (when good singing posture is an established habit, the mere act of assuming it is like putting on a comfortable pair of shoes.

The general health of an individual can be benefitted by good posture. Vital body processes (such as blood circulation and breathing) take place more easily with good posture.

Try visualizing the following descriptive adjectives in relation to posture: noble, buoyant, expansive, alert, free-to-move, vibrant, flexible, poised, tall, loose, free, happy, balanced.

Tension may well be the greatest enemy of the public performer.

Faults related to posture:
1. Head tilted to right or left, front or back
2. Chin too high or too low
3. Raised shoulders, or one higher than other
4. Slumping posture with collapsed chest
5. Protruding abdomen and/or buttocks
6. Too much curvature in small of back
7. One hip more prominent than the other
8. Knees pulled too far back
9. Feet too far apart or too close together

4. Breathing and Support
Breathing for singing has four stages:
1. Inhalation
2. A setting-up-controls period (suspension)
3. A controlled exhalation period (phonation)
4. A recovery period

Experiment with the following ideas:
1. Pretend you are smelling a flower, even to the point of raising your hand to your nose; notice how the breath enters your body slowly and easily without any conscious effort on your part and how deep the breath goes.

2. Pretend you are beginning a yawn, but do not actually go into a full yawn. Notice how your lower jaw drops free in its socket, notice the gently lifting feeling in the area of your soft palate, notice that your throat feels deeper, notice the cool air moving easily through your throat, notice how deep in your body your breath goes without any effort.
3. Pretend you are drinking a glass of water, raising your hand to your mouth; observe how easily your jaw drops open, how deep and spacious the throat seems, the lifting of the soft palate. If you breathe in this position, the breath will enter the body easily and noiselessly, and will go deep without any effort.

Summary of Breathing Concepts:
Some breathing concepts that may prove to be helpful in establishing good habits include:

1. Good posture precedes good breathing
2. Breathe in as if smelling a rose
3. Breathe in as if beginning a yawn
4. Feel the expansion as the air enters your body: In-down-out around the middle
5. Inhalation, suspension, controlled exhalation, recovery
6. Breathe in as if drinking a glass of water
7. Breathing is effortless and noiseless
8. For a 'catch breath' drop the jaw and breathe as if surprised
9. The chest is comfortably high before, during, and after taking a breath.

5. Phonation
Characteristics of Good Vocal Sound

A necessary prerequisite of establishing good phonatory habits is for the singer or speaker to possess a valid concept of good vocal sound. The following descriptive expressions represent some of the important characteristics of good vocal sound:

1. Freely produced
2. Pleasant to listen to
3. Loud enough to be heard easily
4. Rich, ringing, resonant
5. Energy flows smoothly from note to note
6. Consistently produced
7. Vibrant, dynamic, and alive
8. Flexibly expressive

The following list is made up of negative characteristics that tend to preclude good vocal sound:

1. Constricted, forced, or strained
2. Strident or rasping
3. Too loud, resembling shouting or yelling
4. Hoarse
5. Breathy
6. Weak, colorless, or devitalized
7. Inconsistently produced
8. Shaky or wobbly

Technical pointers for maintaining a healthy, vibrant sound:
1. Maintain the expansion around the middle of your body for as long as the sound lasts (avoid collapsing inward)
2. Maintain good posture by standing tall and stretching your spine
3. Keep the chest raised (in a noble position)
4. The shoulders should be still and not moving
5. Maintain good quality of tone with sufficient air supply; avoid trying to sing too long a phrase on one breath
6. Do not “pull in” the diaphragm
If improper closure of the vocal folds occurs (breathy, lifeless, weak, unsupported tone) consider the following possible causes:
1. Poor posture
2. Shallow breathing
3. Lack of suspension phase of breathing
4. Singing too softly (misconception about how loud a singer actually sounds)
5. Wrong vocal models, such as pop music entertainers
6. Failure to recognize good vocal quality
7. Lack of involvement in the music
8. Timidity and related personality factors

When hypofunctional (breathy) phonation occurs, consider the following corrective procedures:

1. Humming (vibration in roof of mouth)
2. Using more energy by singing louder
3. Using more energy with gentle lifting exercises (books, light objects)
4. Imitating an opera singer
5. Establishing good posture and breathing habits
6. Activating breath support mechanism by exercises
7. Singing to the last row of the auditorium
8. Becoming more involved in the music – emoting
9. Adopting correct tonal goals by listening to good singers
10. Vocalizing on forward vowels
11. Vocalizing with nasal consonants (ng)
12. Imitate a ‘tight’ sound (such as a hillbilly or country singer) as a means to an end

When hyperfunctional (tight or pressed) phonation occurs, consider the following corrective procedures:

1. Exercises for relaxation of general body tension (rolling of neck, shoulders etc.)
2. Studio atmosphere conducive to relaxation and self-confidence
3. Establishing good posture and breathing habits, if needed
4. Reducing excess tension in the support mechanism
5. Maintaining the beginning-of-a-yawn position
6. Exercises for balanced soft attack (see pages 90-91)
7. Making singer aware of desired tonal goals
8. Vocalizing on vowels that require lip rounding – the back vowels (such as o, u, and backward ‘c’)
9. Vocalizing with consonants that help to free the jaw
10. Deliberately using a breathy sound as a means to an end

6. Registration
Use of falsetto can be employed in the following instances:

1. in male choirs to enable the 1st tenors to maintain the very demanding tessitura
2. for pitches that are above the range of the modal register
3. for pianissimo tones that would be difficult in the modal register
4. for vocal development
7. Voice Classification
Don’t be in a hurry to classify a voice type.
Assume that a voice is a medium classification until it proves otherwise.

Criteria for establishing voice classification:
1. Range; 2. Tessitura; 3. Timbre; 4. Transition points (breaks or lifts)

8. Resonation
Factors affecting Resonators:
There are a number of factors that determine the resonance characteristics of a resonator. Included among them are:
1. size; 2. Shape; 3. type of opening; 4. composition and thickness of the walls; 5. surface
6. combined resonators

The vocal resonators:
There are seven areas that may be listed as vocal resonators. In sequence from the lowest within the body to the highest, these are the:
1. chest; 2. tracheal tree; 3. Larynx; 4. pharynx; 5. oral cavity; 6. nasal cavity; 7. sinuses

The pharynx is by far the most important resonator, followed by the oral cavity, then the sinuses. Those resonators below the larynx (subglottic) serve little functional purpose. The larynx itself is a small, but somewhat important resonator.

A depressed larynx (i.e. a full yawn), and a high larynx (resulting in a decrease of pharyngeal space, and a resultant tightening of the walls of the pharynx) should be avoided at all costs.

Many teachers agree on the “open throat” theory, although we are still not quite sure what this is. Some believe it to refer to the vertical dimensions (a deep or long throat), others to horizontal expansion (a large throat). What are the desirable characteristics of an open throat?
1. Sufficient size to bring out the lower partials
2. Sufficient flexibility to adjust (tune) to different pitches coming from the larynx
3. Sufficient softness to absorb undesirable high partials and respond to a broad range of pitches, and;
4. Sufficient muscle tonus to preserve the character of the tone.

Causes of a tone that is too brightly produced:
The chief cause of sounds that are too bright is placing too much emphasis on the oral resonator. There are several factors that can cause this to occur:
1. lack of space in the pharynx due to the action of the constrictor muscles and/or elevation of the larynx
2. tension in the walls of the pharyngeal resonator making it too selective
3. wrong tonal models
4. exaggerated mouth opening, pulling the lips back in a forced smile, or protruding the lips too much
5. excessive tension in the lips, tongue, jaw, or palatal arches.

Corrective Procedures for a tone that is too bright:
1. check posture, breathing, and employ general body loosening exercises
2. use exercises designed to loosen the neck, throat, and articulators
3. exercise and emphasize the beginning yawn position
4. develop a new model for the student
5. ask the student to think the sound further back, inside, or internally
6. direct the student to think deeper, richer, more dramatic and darker sounds
Causes of a tone that is too darkly produced:
The chief cause of sounds that are too dark is in placing too much emphasis on the pharyngeal resonator. There are several factors which can cause this to occur:
1. overuse of the “yawning” muscles, with result “spread” throat or depressed larynx
2. lack of oral space due to lip, jaw, or tongue position
3. wrong tonal models
4. flabby surfaces of pharyngeal walls (not enough muscle tonus to give any character to the sound)
5. tongue pulled back into the pharynx

Corrective Procedures for a tone that is too dark:
1. Explain that a balanced sound has a lot of hard palate vibration just behind the teeth and seems to have a lot more mouth vibration near the back of the palate and seems to be more centered in the throat.
2. Try suggestions as: “Bring your tone forward”, “sing outside yourself”, “sing a brighter sound”, try to feel vibration in the front of your face”.
3. If you think the tongue is pulled too far back, have the singer stick his/her tongue out over the bottom lip and sing an “ah” sound. This will give him/her some new vibratory sensations.
4. Exercise on the frontal vowels such as [i], [I], and [el] – this may help brighten the sound.