



## AN APPROACH TO TEACHING MODES

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### **Abstract:**

Modes have historically been at the centre of music until the end of the Renaissance period, and were ignored for a while with the tonal system in the Baroque period and afterwards. However, in the contemporary period, with the search for new music, they started to gain popularity again and continued to be used as major and minor tonalities. Modes, which have their own unique interval structure, have a different sound scale and feeling compared to major and minor tonalities. For this reason, it takes some time for students who have tonal sensation and practice habits to learn and understand the modes. In many written sources, the concept of mode is explained by associating it with the major scale degrees. This way of expression increases the possibility of making mistakes because it is an indirect way. In this study, it is aimed to present a different approach to the teaching of modes, and examples of the way to be followed are given.

**Keywords:** modes, mode teaching, mode teaching approach, music theory, music education

### **1. Introduction**

Music can be defined as an artistic creation in which sound waves vibrating at different frequencies are organized in an aesthetic harmony that can be perceived by the human ear. "Sound is defined as a physical event that creates a fluctuation in ambient pressure by a source and stimulates the sense of hearing in humans" (Bilgiç & Sadıkhov, 1994, p.14). Esi (2017) the ability of musical sounds to give a distinguishable pitch is the feature that distinguishes musical and noise sounds from each other. It is known that the frequencies that the human ear can hear with limited or no hearing are infinitely wide. According to Ergül (2006), the frequency that a healthy and young human ear can hear is in the range of 20 Hz to 20,000 Hz. These frequencies increase one octave for each doubling starting from

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20 Hz. Considering that the human ear can hear a frequency range of approximately 10 octaves, Table 1 shows which frequency range these octaves correspond to.

**Table 1:** Octaves and frequency correspondences

1.octav	2.octav	3.octav	4.octav	5.octav	6.octav	7.octav	8.octav	9.octav	10.octav
20 Hz	40 Hz	80 Hz	160 Hz	320 Hz	640 Hz	1280 Hz	2560 Hz	5120 Hz	10240 Hz
40 Hz	80 Hz	160 Hz	320 Hz	640 Hz	1280 Hz	2560 Hz	5120 Hz	10240 Hz	20480 Hz

In different musical cultures, scales with different numbers of sounds at different frequencies in an octave interval are encountered. For example, it is known that pentatonic (5-note) scale is used in Chinese music tradition, while different cultural heritages such as Classical Western music, Indian music, and Turkish music use sounds with different frequencies. To a listener born and raised in Western musical culture, music containing these sounds may sound out of tune, but to local people, it will sound perfectly normal. These scales of different frequencies and different note counts can be traditionally formed through thousands of years of musical evolution, or they can be completely fictionalised. Over time, some music people have produced and used special synthetic scales with experimental methods. Hardegree (2001) mentions that along with the major scale, there are thousands of different scales that people have theoretically studied and hundreds of scales that they actually use to make music. For example, he said that there was even an instrument called the "archicembalo", which has 31 keys in the octave, dating back to the 16th century, where the octave is divided into 31 equal intervals. In Western music, the interval of one octave is divided into 12 equal parts by various calculations generally thought to have been devised by Pythagoras. This 12-note scale is today called the chromatic scale. Diatonic scales consist of 7 notes. Koss (2009) expressed the diatonic scale as consisting of 5 full intervals and 2 full intervals, with half intervals separated by 2 or 3 full intervals. The best-known example;

1.C - 2.D - 3.E - 4.F - 5.G - 6.A - 7.B - 8.C is the C scale with the order.

Scales are used as melody production materials between the form of a composition and the composer's imagination. Some scales create energetic emotions such as happiness, joy and hope, while other scales create a more sombre, sad, and melancholic atmosphere. Scales allow composers and musicians to control the emotional expressive power of music. The choice of the appropriate scale when creating a composition determines the emotional character of that piece, and modulations can be used to create different emotional states. Both tonal and modal scales are special scales that can create different emotional atmospheres.

## 2. What is a Mod?

Scales are one of the basic subjects in music theory and practice. In music theory books, they appear under two main headings as tonal and modal scales. Tonal scales are major and minor scales. Modes, which have different characteristics from major and minor, are

expressed as based on major tonality degrees, taking into account the way they were formed in the historical process. Modes can be defined as special scales with their own interval structure as in major and minor tonalities. They are generally divided into two categories: Greek modes and Church modes. Apart from terminological differences, modes have actually evolved in the same way.

### 3. Historical evolution of Mods

Coretz (1950) stated that the first keyboards were also used before Christianity, but that it was difficult to document the development of the keyboard until the 17th century, and that according to the data obtained from an Egyptian wall painting and a clay model found later and a water organ found in Carthage, the first keyboard instruments had a small number of keys and each key was the same size and colour. Özgür (2001), while talking about the Ancient Greek modes, stated that the sharp and flat signs were not yet used at that time and that each mode was written starting from a different sound of the diatonic note scale. Therefore, it would be appropriate to say that the modes start from different degrees of a certain note order.

In the Middle Ages, modes were widely used in the church, which had a significant influence on music. During the Renaissance period, it is known that the use of modes reached its peak, and the modes were extensively discussed by musicians, composers, and theorists, and their diversity increased. Gioseffo Zarlino, one of the leading theorists of the period, categorised modes into 12 different series in his book "Le Istitvtioni Harmoniche".



Figure 1: Modes in the Middle Ages (Zarlino, 1562, p. 310)

In the Baroque period, it is observed that the interest in modes decreased and lost its popularity. It is known that major and minor tonalities were on the rise in this period, and these tonalities came to the fore in the Classical and Romantic periods. Hindemith expressed this transformation as follows: "The real beginning of the process of the death of the church modes is the moment when the harmonic sense first gained the possibility of expression with the first appearance of polyphony. The beginning of polyphony is also the beginning of the dominance of major and minor scales." (Hindemith, 2022, p. 83).

In the 20th century, which is called the contemporary period, modes started to gain popularity again. Modes appear in many different fields and cultures such as classical Western music, jazz, blues, ethnic, and popular music genres. Jazz musicians benefit from the different atmospheres of modes from tonality during their search for innovative and original music. Modes play an important role in today's music genres to the extent that they are not inferior to tonality. When the teaching of modes in today's music theory textbooks is analysed, it is seen that it is generally based on major scale degrees.

According to this way of expression:

- Major 1.degree scale ionian (=major),
- 2. degree scale dorian,
- 3. degree scale phrgian,
- 4. degree scale lydian,
- 5. degree scale mixolydian,
- 6. degree scale aeolian (=natural minor), and
- 7. degree scale locrian modes.

#### **4. Modes and teaching in the literature**

Modes, which are an important subject of music theory, are definitely analysed in theory books. Examples of modes and their teaching in national and international theory books are given below.

**A.** Wharram (1969) states that modes were used by the ancient Greeks, building on tetrachords. He explains that these modes, most of which are still in use today, were used in Roman Catholic church music, that the names were confused as they became more and more varied, and that around 600 AD, Pope Gregorius I regulated the names of the modes for the church. He also says that the modes can be produced by using only white keys on the piano and that each mode can be produced by starting from a different note, and that the note where it starts and ends is called "Final". The mode names are presented comparatively in order to understand the differences between Church and Greek modes.

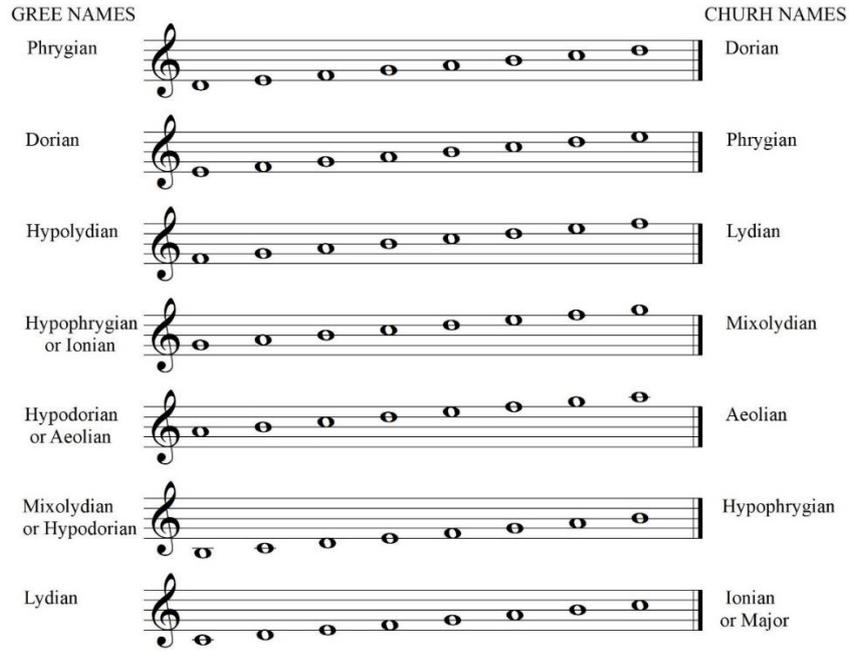


Figure 2: Modes (Wharram, 1969, p. 51-52)

B. Bell and Pickow (1987) explained modes as a specified arrangement of all scales of a degree other than the 1st degree of the major scale.

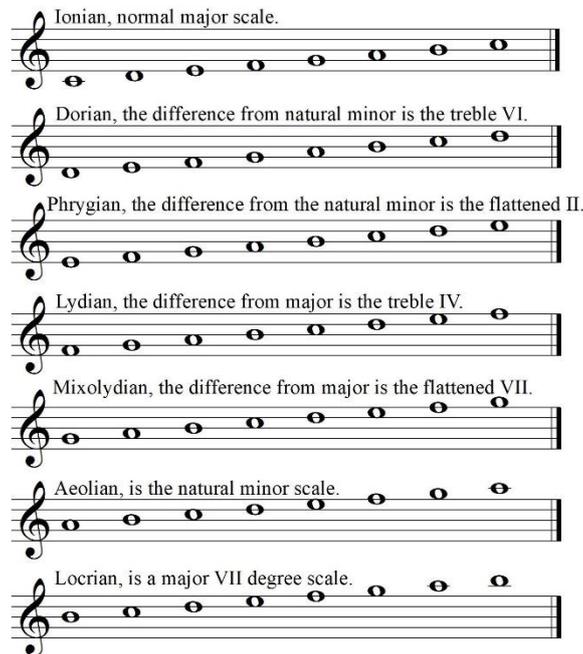


Figure 3: Modes (Bell & Pickow, 1987, p.16-17)

C. Yavuzoğlu (1996) expressed the modes with a visual under the subheading "Scales Derived from the Major Scale".

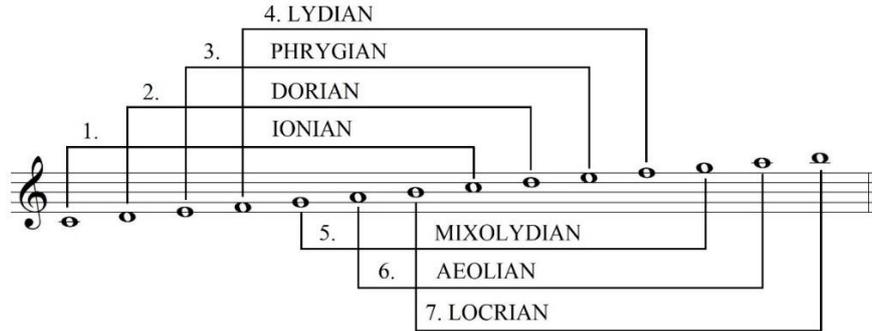


Figure 4: Modes (Yavuzoğlu, 1996, p.60)

D. Usman (2017) mentions that Renaissance music is based on modes. He defines modes as scales of half and whole tones in an octave that can be created by using only the white keys of the piano in certain scales.

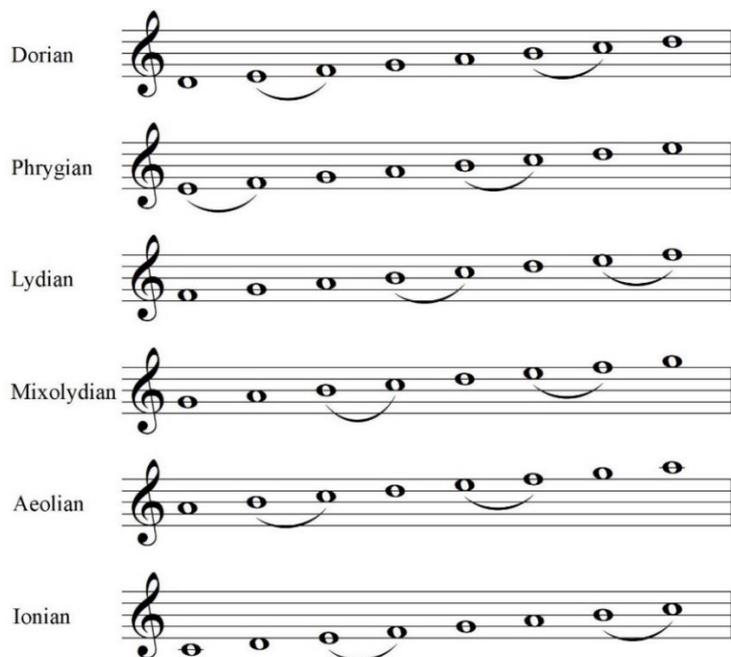


Figure 5: Modes (Usman, 2017, p.16)

## 5. The necessity of mode teaching and difficulties encountered in mode teaching

It is known that the dominance of modes in music was great until the end of the Renaissance. After the Baroque period and the tonal system came to the forefront, the modes remained in the background for a long time. Modes, which were generally limited as cultural and theoretical knowledge in theory books, started to gain popularity again, especially during the search for new music in the Contemporary period, and today they have reached the same value as major and minor tonality. Today, it is thought that it is necessary to re-examine and research the concept of mode in detail, to make new studies on it, and to give more space to subjects such as modal reading and writing studies, modal harmony studies. In the education process that proceeds with purely tonal education, students may experience confusion in modal sensation and theory when they

are educated only with the weight of studies such as tonal sensation, tonal solfege, and tonal harmony.

Since modes are different from the tonal system, it may take time for students to understand them. In education, the method of expression with major tonality degrees is mostly adopted for modes. Modes have different sound scales and feelings according to major-minor tonalities. In many written sources, the concept of mode is explained by associating it with major scale degrees. It may take time to understand the concept of mode, especially for students with tonal sensation and practice habits. In addition, when they encounter them in classical music theory courses, they may think that the modes are out of the ordinary and may have difficulty in motivating them to learn.

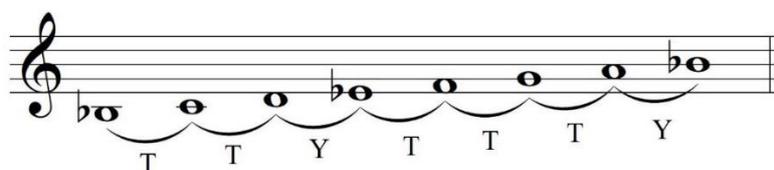
One of the problems that may be experienced in mode learning may be the lack of material. Students may have problems in finding suitable pieces, tunes, recordings or teaching materials. Because a very important and well-known part of the literature is dominated by tonality. Therefore, various methods have been developed for students to find tonal equipment. For modes, there is no approach other than the traditional method of finding them through major scale degrees. In the traditional method of finding the hardware of a mode, for example, the following procedure is followed:

\*Since the mixolydian scale is the 5th degree scale in major, which scale is the 5th degree of the F note?

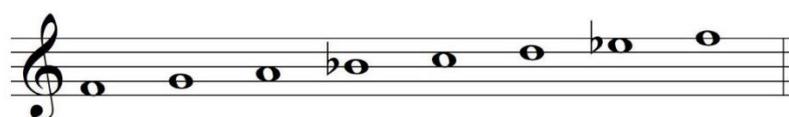
A student who goes down 5 steps by counting down from the F note experiences his/her first surprise that the B flat note he/she has to find should be either B flat or B flat.



Once the B flat is found correctly, the hardware for the second step, the B flat major scale, should be found.



Finally, these modifier signs should be added to the fa scale to form the fa lydian scale.



The probability of error in the mode scale to be constructed in this way may be high. Because the path followed to find the mode is long and the margin of error is high. It is thought that a different approach is needed to minimise the margin of error in the

construction or finding of modes. In addition, it is known that the modes, which have gained popularity again with the musical developments after the Contemporary period, have sometimes overtaken the use of tonal scales. Modes are used much more, especially in countries like Turkey where makam music is still alive. In order to use polyphony in makam music, makam scales can be transformed into modes by adapting them to the tamperaman sound system.

From this perspective, it is seen that mode teaching is as valuable as tonal education. In addition, the fact that a systematic approach to mode teaching other than the method in the historical tradition has not become widespread has led to the necessity of this study. In this context, the aim of this study is to present a different approach to mode teaching, which is not available in the literature due to the aforementioned reasons.

## 6. A different mode of teaching approach

### 6.1. Mode teaching

In this approach, it is sufficient for the student to know only major and minor scales. When it is applied as given in Table 2, it can be easily found which scale corresponds to the mode searched. Examples related to the subject expression are given below.

Table 2: Modes and scale equivalents

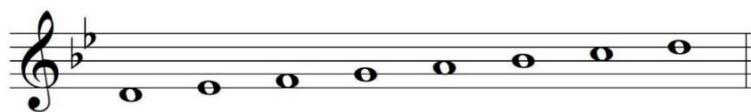
Mode	Scale
Ionian	same as the major scale
Dorian	Natural minor scale and 1#
Phrygian	Natural minor scale and 1b
Lydian	Major scale and 1#
Mixolydian	Major scale and 1b
Aeolian	same as the minor scale
Locrian	Natural minor scale and 2b

#### Example 1: D phrygian mode

According to Table 2, 1 flat must be added to the natural minor scale corresponding to the phrygian mode. In this case, we write the natural minor scale D and add 1 flat:

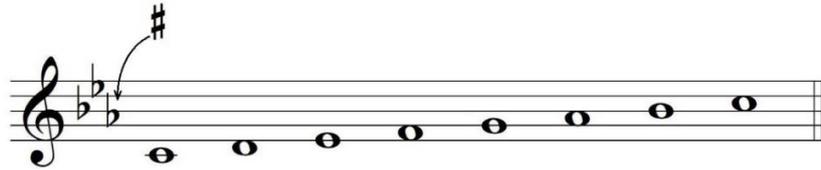


When 1 flat is added to the hardware, we get the D phrygian mode with 2 flats.



**Example 2. C dorian mode**

According to Table 2, 1 sharp should be added to the natural minor scale corresponding to the dorian mode. In this case, we write the natural minor scale C and add 1 sharp:

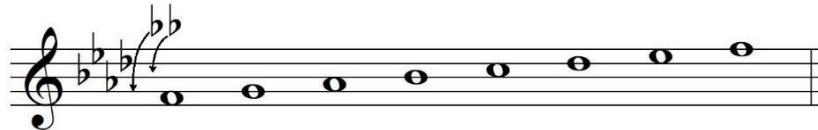


When another sharp is added to the hardware, 1 flat is subtracted from the hardware and we get the C dorian mode.



**Example 3. F locrian mode**

According to Table 2, 2 flats should be added to the natural minor scale corresponding to the locrian mode. In this case, we write the F natural minor scale and add 2 flats:

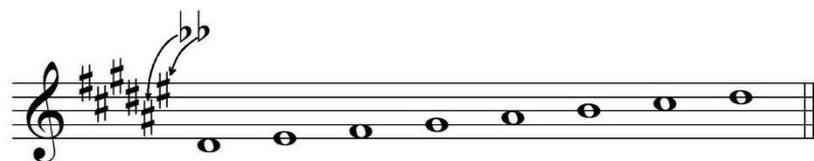


When 2 more flats are added to the hardware, we get the 6-flat F locrian mode.

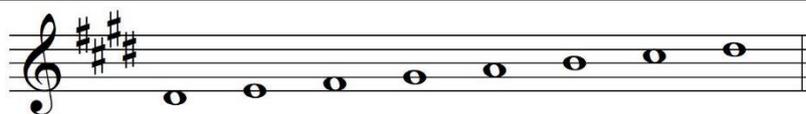


**Example 4. D sharp locrian mode**

According to Table 2, 2 flats should be added to the natural minor scale corresponding to the locrian mode. In this case, we write the D sharp natural minor scale and add 2 flats:



When two more flats are added to the hardware, 2 sharps are deleted from the hardware and we get the D sharp locrian mode with 4 sharps.

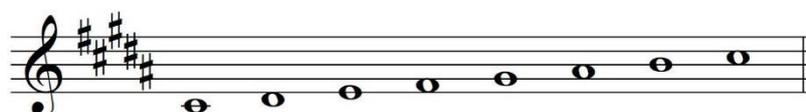


**Example 5.** Finding which mode the scale is

In order to find out which mode the given scale is, the following procedure is followed:

The example below shows a 5-sharp scale written between C sharp and C sharp. However, there is no tonal equivalent of the 5-sharp C sharp scale. In this case, two possibilities are evaluated; the scale is constructed from major or minor.

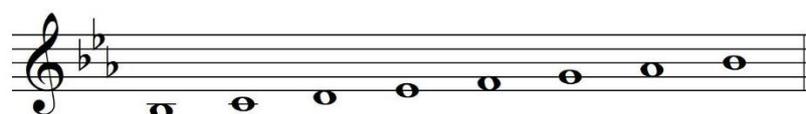
While the C sharp major scale uses 7 sharps, the C sharp minor scale uses 4 sharps. When Table 2 is analysed, it is seen that this scale obeys the formula "natural minor scale+1 sharp", which will lead us to a scale with 5 sharps. The mode formed when 1 sharp is added to the C sharp natural minor is the C sharp dorian scale.



**Example 6.** Finding which mode the scale is

The example below shows a 3-flat scale written between B flat-B flat. However, there is no tonal equivalent of the 3 flatted B flat scale. In this case, two possibilities are evaluated; the scale is constructed from major or minor.

While the B flat major scale uses 2 flats, the B flat minor scale uses 5 flats. When Table 2 is analysed, it is seen that this scale obeys the formula "major scale+1 flat", which will lead us to a 3-flat scale. The mode formed when 1 flat is added to B flat major is the B flat lydian scale.



## 7. Conclusion

Modes should be learned in the process of music education in order to develop music theory and performance skills, to deepen musical understanding, to improve composing and improvisation skills, to hear the music better, to get rid of the dependence on purely tonal sensation, and to open wide affective perceptions, to analyse, to understand composition, to develop the ability to follow and to adapt to different musical genres. Unless the learning of modes is as regular and systematic as tonality education, it may seem complicated to students and may take time to learn. It is thought that a coordinated education process with tonality education is required. In this study, a different mode teaching approach was presented by foreseeing the difficulties that may be encountered in mode teaching. With this method, it is thought that students will create an alternative

to the existing methods in mode finding and mode setting studies and will learn the subject more practically.

When the national theory books on mode teaching are analysed, it is seen that the subject is not sufficiently covered. At the same time, different expressions such as "C ending C major scale" are used instead of "mode" in the nomenclature, and in some sources, only these expressions are used. Again, the absence of the subject of "mode" in the updated national music education curricula is also quite remarkable. It is thought that the absence of the modes, which have been widely used in the process until today, in the education curriculum, being expressed in different terms in some existing books and being mentioned under a short theoretical and superficial title constitute an important deficiency in terms of music education.

### Conflict of Interest Statement

There are no potential conflicts of interests with respect to the research, authorship and/or publication of this article.

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