The Effect of Curwen Hand Signs on Vocal Accuracy of Young Children

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When teaching singing in the elementary classroom, music teachers are faced with decisions concerning which method to use. Many approaches exist to encourage more accurate singing as children’s voices develop. These approaches range from group singing (with a teacher or with a recording with little attention paid to vocal accuracy) to highly developed sequential methods.

One of the more popular of these sequential methods is the Kodály approach. Developed by Hungarian composer and music educator, Zoltán Kodály (1882-1967), this method advocates the use of a series of hand signs presented in conjunction with singing of solfège syllables. Kodály and teachers working with him chose to use hand signs developed by John Curwen (1816-1880) to reinforce intervallic relationships among pitches (Choksy, 1974).

In the 1960’s, several music educators from the United States and Canada, including Tibor Bachmann, Lois Choksy, Mary Helen Richards, and Denise Bacon, studied the Kodály method with Kodály in Hungary and brought back adaptations of it to music educators in North America (Mark, 1986). Since then, music educators have praised their efforts in introducing the Kodály method in American schools.

Although little research has been conducted studying the effectiveness of the Curwen hand signs on vocal accuracy, music educators have advocated their use in music instruction. Zemke (1973) stated that “these signals [add] a feeling of stability and security to a singer searching for correct placement of notes” (p. 24). Carder explained that the hand signs “utilize the pull of certain scale tones toward the tonal center and toward the fairly stationary sounds of mi and sol” (Carder, 1990, p. 66). Choksy (1974) also advocated the use of the Curwen hand signs, stating that the “la, sol, mi sequence” and the use of hand signs with most songs in the Kodály sequence is recommended for first grade music students. She stated that they “present a visualization in space of the high-low relationship among the notes being sung” (p. 26). She also emphasized that the shape and positioning of the hand signs is what makes them effective: “The hand signs for the half steps ti-do and mi-fa . . . emphasiz[e] the smallness of these half steps”(p. 21) and that “the distance between the hand signs should reflect, to some extent, the size of the interval being sung and shown” (p. 21).

Music educators have advocated the use of the Curwen hand signs as an aid in the kinesthetic learning modality, one of several learning style modalities described as sensory channels through which information is given and received. For example, auditory learners prefer to use their
voices and ears; visual learners prefer to use their eyes; and kinesthetic learners prefer to use whole-body involvement and direct experience to process information (Wallace, 1995).

The use of the Curwen hand signs qualifies both as a kinesthetic and visual learning aid, because the student physically makes and moves the hand signs and also sees the patterns in the signs as they are used. The absence of hand signs creates an environment of purely auditory learning, providing no additional visual or kinesthetic aids are used in the classroom. Music teachers who implement the Kodály method in their classrooms today do so in order to reinforce intervallic memory by involving the kinesthetic modality.

Apfelstadt (1986) found that using learning modalities affected the singing of discrete pitch patterns and that the auditory modality seemed the most abstract to children when they were asked to perceive melody. “Merely hearing the melodic pattern is vague” (p. 6), but reinforcing the perception with a kinesthetic or visual stimulus can help make the learning more concrete.

Persellin (1988) concluded that the visual modality was more successful than either the auditory or kinesthetic modalities in encouraging vocal accuracy in first graders. Persellin’s study agrees with Apfelstadt’s findings in that the visual modality promoted more accurate singing.

Research studies have addressed various aspects of the Kodály method, but have not focused on the effect of the Curwen hand signs on vocal accuracy on young, developing singers. Beatty (1989) compared the effects of the Kodály method, emphasizing the visual, aural, and kinesthetic means of perceiving rhythm and melody, and the effects of a more traditional music program on kindergarten students’ music learning. Although his findings showed that no significant gains were present in the areas of pitch and rhythmic discrimination, the students taught using the Kodály method could match pitch better than could students in the traditional class.

Hurwitz, Wolff, Bortnick, and Kokas (1975) found that that the Kodály method had a positive effect on boys’ reading skills and spatial-temporal performance, but the effect of hand signs on vocal accuracy was not examined. Martin (1991) conducted a study investigating the contributions of solfège syllables, hand signs, and pitch letter names on the development of first graders’ music skills. She found that no method was significantly better than another for skill development.

In a related study, Jones (1981) investigated spatial reinforcement, in the form of physical involvement with activities which spatially reinforced pitch, as a way to improve pitch discrimination in seven-year-olds. She found no statistical differences between the group physically involved in spatially reinforcing pitch and a control group.

Using Curwen hand signs in a Kodály method of vocal music instruction may allow students to choose from several sensory channels through which they receive information. The purpose of this study was to assess the effect of Curwen hand signs used in conjunction with solfège syllables on young children’s vocal accuracy.

Method

The subjects of this investigation were 47 first-graders in a suburban elementary school in San Antonio, Texas. One class \((n = 24)\) was composed of 14 girls and 10 boys (mean age, 6.7 years). A second class \((n = 23)\) was composed of 10 girls and 13 boys (mean age, 6.8 years). All children in both classes attended music classes two or three times each week for 25 minutes. Both classes received equal time in music class for the duration of the study.

During the first week of school, prior to the 10-week treatment, all students were assessed as to their pitch-matching ability. A the Children’s Vocal Accuracy Scale was created for this study
by the authors and was based on the Singing Voice Development Measure (Rutkowski, 1990, 1998). The Rutkowski instrument determines vocal development and accuracy of developing singers (“pre-singers” through “inconsistent singers”) on an 8-point scale. The Children’s Vocal Accuracy Scale extends this 8-point scale to a 14-point scale. Children who were judged to be “singers” were analyzed using the part of the scale ranging from 10-14.

All children were individually recorded in a quiet room singing and 8-measure song, modeled first by the piano and then by a female voice. No verbal feedback was given to the students regarding their vocal accuracy during the administration of the pretest. The students’ taped responses were analyzed separately by a panel of three music educators, and interjudge reliability was deemed satisfactory ($r = 0.90$).

Children who sang the composed eight-measure song without error rated a “14”; children who missed one note, usually due to an intonation problem, rated a “13.” Both parts of the scale have been evaluated by elementary music education experts and deemed appropriate for judging vocal accuracy of first graders.

During the 10-week treatment period, both first-grade classes were instructed by the same music teacher and received exactly the same music instruction with one exception. The first class was taught to sing and read music notation using the Curwen hand signs in conjunction with solfège syllables. The second class was taught to sing and read music notation using solfège syllables without Curwen hand signs. Both classes participated in opening activities, score-reading exercises, and singing games. The subjects studied music in this fashion for 10 weeks, with the primary investigator of this study serving as the teacher for both classes. All classes were videotaped. Two judges observed a random sample of five taped lessons of both classes to determine that equal enthusiasm, time on task, and methods were used with each class.

During the treatment phase of the study, verbal feedback was given to the students regarding their ability to match pitches in several patterns utilizing the sol, mi, and la solfège syllables. Students in the first class were also given verbal feedback regarding the proper use of the Curwen hand signs. The teacher utilized both the hand signs and her voice to model and instruct those in the first class who were not able to match pitch, but she only used her voice to model and instruct those in the second class who were not able to match pitch.

Following the 10-week treatment period, the children were again tested by both investigators to ascertain if the hand signs contributed to vocal development and pitch-matching ability. The same method was followed that was used for the pre-test.

**Results**

The study was designed to determine whether children taught to sing using Curwen hand signs would sing more accurately than children taught without the use of hand signs. Forty-seven children completed both the pretest and post-test. Twenty-four children were taught for the full 10-week period with the Kodály method, including the Curwen hand signs. Twenty-three children were taught for the full 10-week period with the Kodály method, without the use of the hand signs. Pretest and posttest scores were analyzed to determine whether the treatment had a significant effect on vocal accuracy of the first-graders.

The mean pretest score for students in the Curwen hand signs group was 7.8. Their mean score for the post-test was 9.0. Students in the Solfège-only group also showed a gain in vocal accuracy. The mean pretest score of students in the pretest for the Solfège-only group was 6.7 compared to 7.6 for the post-test.
Comparing the two post-test scores using a repeated-measures ANOVA showed no significant difference between the two groups. Figure 1 illustrates the increases between the pre-test and post-test scores for the Curwen hand signs group and for the Solfège-only group.

\[\text{Figure 1. Comparison of pre and post-test results of Curwen Hand Sign Group and Solfège-only Group.}\]

Discussion

Although the results of this study indicate that both groups saw gains in vocal accuracy following music instruction, the mean post-test score of the Curwen hand sign group was not significantly higher than the mean post-test score of the Solfège-only group. Several limitations in the design of the research should be considered in interpreting these findings. The size of the tested sample, the 10-week treatment period, and the 50-75 minutes of music instruction per week may not have been sufficient to produce detectable effects.

Teaching children to sing accurately is a major goal of elementary music educators. Although some children may learn to sing with greater accuracy by simply listening to and then echoing vocal models, other children may need additional forms of interaction such as visual and kinesthetic stimuli. These stimuli may help to make the experience of singing more specific and concrete. Helping our students to develop more than one modality strength through a multi-modality method such as the Kodály method may be advantageous in terms of promoting vocal accuracy.

References


