The Effects of Syllabic Articulation Instruction on Woodwind Articulation Accuracy

The purpose of this study was to investigate the effects of a multi-syllabic articulation approach on high school woodwind students’ individual articulation accuracy. Subjects were 66 high school woodwind players, matched, and then randomly assigned to treatment and control groups. For seven consecutive days, the subjects were taught articulation techniques using either a mono-syllabic or multiple-syllabic approach. Following instruction, the subjects were asked to perform varying articulation patterns in rehearsed and sight-read music, and post-test scores were calculated based on their articulation accuracy. Two, two-way analysis of variance tests found: (a) a significant difference between groups for individual performances of the rehearsed exercise favoring the multi-syllabic approach \( p < .0001 \), (b) a significant difference between groups for individual sight-reading performance favoring the multi-syllabic approach \( p < .0011 \), (c) no significant difference for the independent variable of instrument for either test, and (d) no significant interactions. These results suggest that multi-syllabic articulation instruction for high school woodwind students has a significant effect on improving articulation accuracy for rehearsed and sight-read music across all woodwind instruments.

The instrumental music educator is concerned with teaching a variety of fundamental techniques and among these is articulation (Pizer, 1976). Expert pedagogues devote significant portions of their texts to explain the correct psychomotor techniques for accurate articulations (Kohut, 1973; Timm, 1964; Weisberg, 1975). Likewise, research on rehearsal priorities suggests that band directors spend large portions of their instruction time addressing articulation problems (Bell, 1986; Birkner, 1992; Carpenter, 1986; Dressman, 1990; Goolsby, 1997; Har-
ris, 1992; Kotchenruther, 1997; Menchaca, 1988; Moss, 1989; Pontious, 1982; Sherrill, 1986; Taylor, 1989). For example, Goolsby (1997) found that band directors spent 21.4% of verbal instruction time on articulation problems, second only to rhythm/tempo. Similarly, Moss (1989) and Birkner (1992) reported that the largest percentage of time spent during conductor stops in rehearsal performance was to address articulation errors.

Teaching articulation is difficult for several reasons. First, articulation is largely a function of tonguing. Because the tongue is not visible during wind performance, teachers rely on aural, as well as external-visual cues to insure proper technique (Kohut, 1973). Second, the act of articulation requires that student performers coordinate the tongue and breath with precision to produce stylistic results (Kohut, 1973). Finally, pedagogues disagree on tonguing techniques for the same instrument, as well as across families of instruments. For example, some woodwind pedagogues teach students to use the tongue to separate notes in staccato passages (Bonade, 1957; Cooper, 1968; Gannassi, 1956; Goossens & Roxburgh, 1977; Greenberg, 1983; Hotteterre, 1707/1968; Hovey, 1955; Kohut, 1973; Reiss, 1986; Russianoff, 1982; Seltmann & Angerhöfer, 1977; Timm, 1964; Webb, 1994; Weisberg, 1975; Westphal, 1985; Willett, 1966), whereas others advocate separating notes with the air only (Saucier, 1981; Spell, 1991; Weisenborn, 1941). Additionally, there are pedagogues who teach that the basic principles of articulation are the same for all woodwind performers (Bayard, 1955; Kohut, 1973; Timm, 1964; Weisburg, 1975). There is a lack of standardization in teaching articulation (Kohut, 1973).

Some band directors teach students to use syllables to facilitate the use of desirable tongue movement in articulation. For example, Lisk (1987) advocates using syllables to help students learn difficult articulation patterns:

Any type of complex articulation pattern must first be spoken in tempo before achieving any success with an instrument. The ability and skill in being able to speak the articulation pattern is also critical in developing ensemble articulation clarity and definition (individual, section, and total ensemble) (p. 47).

Some instrumental pedagogues (Kohut, 1973; Timm, 1964; Westphal, 1985) recommend using the same set of syllables for all woodwind instruments. Kohut gives specific articulations syllables that he believes should be used across the entire band. He discusses the psychomotor action of the tongue when articulating and the justification of the need to use the “tongue release”. He believes it leads to ensemble precision when playing staccato passages. “Wind players need more concrete direction in articulation. Teaching students a syllable approach to help execute arti-
ulations would seem to give students the concrete instruction they need to make independent musical judgments; hence, saving directors rehearsal time” (p. 133).

Timm (1964), in his text *The Woodwinds*, devotes an entire chapter to articulation where he illustrates common notations and suggests a corresponding syllable for each. In determining syllables, he believes fundamental attacks should use a consonant *t* and legato attacks should begin with a consonant *d*. He also indicates that for staccato notation the syllable *tut* should be implemented. Westphal (1985) also supports tongue-release technique and gives guidelines in the following manner:

In the performance of staccato notes the placement and action of the tongue is the same as that learned for normal articulation, except that the tongue returns to the starting position to stop the tone. This can be visualized by putting a “t” on the end of the syllable used to start the tone (p. 94).

In *Art of Wind Playing*, Weisberg (1975) devotes an entire chapter on the psychomotor skills needed for the execution of notated articulations. Importantly, he recognizes that woodwind instrumentalists utilize similar tonguing skills:

The angle and point on the reed at which the tongue strikes is different from the oboe, clarinet, and bassoon. The reason for this is simply the manner in which the instrument is held and the way in which the reed is placed on it. These differences of angle having nothing to do with the basic principles of tonguing, which apply equally to the three instruments (p. 18).

He goes on to indicate that the most basic type of tonguing technique is staccato, and all other types of articulation skill should stem from it; it is executed by the tongue-release technique. He recognizes that “the natural breathing process can start and stop the air, but it cannot do this with precision and the necessary speed” (p. 17). He further recommends, “after the note has sounded . . . stop it by putting the tongue back on the reed, thus closing the valve and stopping the note” (p. 22). In contrast, some pedagogues offer only one syllable to begin articulations and never discuss note endings (Barcellona, 1991; Bollinger, 1979; Duvall, 1960; Hugot, 1975; Labuta, 1972; Mather, 1980; Pizer, 1976).

Unfortunately, there is no empirical research on the use of a syllabic approach to enhance individual articulation accuracy. The purpose of this study was to compare two articulation approaches for woodwind students: (a) a mono-syllabic approach whereby the performer uses a single syllable (*tah*) and controls the note length by stopping the breath; (b) a multiple-syllabic approach whereby the performer uses different syllables (*tah, dah, tut, taht*) to facilitate a breath- or tongue-release to control
the length of notes. More specifically, the following research questions were exam-
ined: (a) Is there a significant difference (p < .05) in articulation scores by approach
(multi-syllabic or mono-syllabic) for prepared and sight-read performances?; (b) Is
there a significant difference (p < .05) in articulation scores among instruments for
prepared and sight read performances?; and (c) Are there any significant interactions
(p < .05) in articulation scores among instruments by approach (multi-syllabic or
mono-syllabic) for prepared and sight read performances?

Method

Two high school band directors from one large school indicated that they
taught a breath-release approach to their wind students. Therefore, the author
chose this high school for the study since the students currently articulated using
the mono-syllabic approach that would be used in this study. Sixty-six woodwind
players in grades ten, eleven, and twelve from the single high school participated
in the study. These students were matched based on Watkins-Farnum (1954) test
scores and instrument; then one person from each pair was randomly assigned to
the multi-syllabic (n = 33) group, with the other person assigned to the mono-syl-
labic (n = 33) group. To verify the equality of groups, the school’s two band direc-
tors examined students assigned to each group. In their opinion, the groups were
equal in performance and articulation achievement. Each group started with 16
flutes, 3 double reeds, 9 clarinets, and 5 saxophones.

A posttest-only design was implemented (Campbell & Stanley, 1963) with two
independent variables: articulation approach (multi-syllabic and mono-syllabic) and
instrument (flute, clarinet, double reed, and saxophone). Instruction in the multi-
syllabic group included different syllables to reinforce tongue movement, such as 
dah
for legato notes, and tut
for staccato notes (see Figure 1). In the mono-syllabic group,
students started all notes with tah. The researcher instructed the subjects to stop their
air to adjust for different articulation markings, hence, reinforcing instruction previ-
ously given by their directors. All subjects received instruction on the following artic-
ulation: fundamental, legato, staccato, half-staccato, and mixed. The researcher
explained and modeled the tonguing technique appropriate to each notation.

Both groups, multi-syllabic and mono-syllabic, were taught by the researcher
for twenty minutes each day for seven consecutive days. On day one, the multi-
syllabic group received instruction first and on day two the mono-syllabic group
went first. The instructional order was reversed daily in an effort to eliminate any
adverse effect that order might cause. The school’s two band directors monitored
the teaching of each group to verify equal instruction.
Multi-syllabic

Tab: fundamental

Tut: staccato

Tab-ut-tut-tut: mixed

Tah-ut-tut-tut: mixed

Mono-syllabic

Tab: fundamental

Tah: staccato

Tab-ah-tab-tab: mixed

Tab: half staccato

Tab: legato

Figure 1. Woodwind Articulations
All subjects were monitored while they practiced the articulations individually, in sections by instrument, and while playing together in their respective group – multi- or mono-syllabic. Students used a defined sequence to learn the articulation approach: (a) verbalize the syllables, (b) hiss the articulations on an airstream, (c) “air play” the articulation on the instrument without sound, and (d) perform the articulations on their instruments. All subjects progressed from single tones, to articulated scale exercises, and finally to excerpts from their rehearsal literature. The articulation notations were applied to a variety of rhythms; it was not the intent of this study to enhance rhythm reading using articulation syllables, but to measure improved articulation execution. Figure 1 is a sample illustration of the articulations used. At no time was the articulation taught solely with the rhythms in this figure. Additionally, the subjects never saw this document.

After subjects learned all syllables and articulations, they transferred their new skill to sight-reading excerpts from the following literature: Chorale and Shaker Dance, Zdechlik; Procession of Nobles, Rimsky-Korsakov; March from Folk Song Suite, Vaughan Williams; March of the Belgian Paratroopers, Leemans; First Suite for Military Band, Holst; and Lincolnshire Posy (movement 4), Grainger. All examples chosen reinforced the approaches taught and represented articulation passages commonly found in woodwind music. The subjects used the same sequence when sight-reading as when learning the articulations.

After the seven-day instructional period, all subjects were recorded individually over two days documenting the performances on cassette tapes. The test included one prepared example, an articulated scale exercise, and one sight-reading excerpt—Sousa’s George Washington Bicentennial March (see Figure 2). Before taping his or her sight-reading test, each subject reviewed the excerpt up to thirty seconds. The subjects were instructed to use the time to practice the articulation in the same manner used during the instructional period.

![Figure 2. Individual Sight-reading Example: George Washington Bicentennial March](image-url)
To insure reliability in measurement, three expert judges scored the audio taped student performances. Each exercise—rehearsed and sight-reading—was assigned a total number of points (26 and 20) based on the total number of articulations possible. Judges listened to each subject’s performance, then counted the number of articulations performed correctly to generate a score for each subject. Inter-judge reliability was satisfactory (.83 rehearsed exercise and .87 for the sight-reading exercise). Judges’ summed scores for rehearsed and sight-reading exercises served as the dependent measures. Two, 2x4 analysis of variance tests (group x instrument) were used to analyze the data: one for the rehearsed exercise and another for the sight-reading excerpt.

Results

For Research Question 1 (Is there a significant difference ($p < .05$) in articulation scores by approach (multi-syllabic or mono-syllabic) for prepared and sight read performances?), the analyses revealed a significant difference for both dependent measures favoring the multi-syllabic approach—rehearsed exercise ($p = .0001$) and sight-reading exercise ($p = .0011$)—as indicated in Tables 1 and 2. For Research Question 2 (Is there a significant difference ($p < .05$) in articulation scores among instruments for prepared and sight read performances?), there was no significant difference found for instruments. Likewise, there were no significant interactions ($p > .05$) found for Research Question 3 (Are there any significant interactions ($p < .05$) in articulation scores among instruments by approach (multi-syllabic or mono-syllabic) for prepared and sight read performances?), therefore implying that the multi-syllabic approach worked equally well across all instruments.

Table 1

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Note. *$p < .0001$
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Note. *p < .0011

Discussion

The results of this study indicate that the multi-syllabic approach may be more effective in improving woodwind articulation accuracy than a mono-syllabic approach. Woodwind players who used a multi-syllabic approach performed articulations significantly better on rehearsed music than those subjects who used only one syllable to execute a variety of articulations. Also, this study indicates that the multi-syllabic approach may be more effective in aiding students in their ability to accurately execute articulations in unfamiliar music (as measured by sight reading). The results show no interactions between the syllabic approach and instrument type – flute, clarinet, double reeds, and saxophone. Therefore, the use of multi-syllabic instruction appears effective for all woodwind instruments.

These results also indicate that the multi-syllabic approach may be more effective for improving articulation accuracy for woodwind sections in the high school band with a short amount of instruction time. Instrumental directors could employ this technique to improve articulation throughout their woodwind sections and to minimize rehearsal stops caused by articulation problems, which seems to be a common problem in rehearsals (Bell, 1986; Birkner, 1992; Carpenter, 1986; Dressman, 1990; Goolsby, 1997; Harris, 1992; Kotchenruther, 1997; Menchaca, 1988; Moss, 1989; Pontious, 1982; Sherrill, 1986; Taylor, 1989). The multi-syllabic approach should help directors teach articulation skills efficiently.

Finally, any study of this sort must consider alternative explanations for the findings. It is important to note that the multi-syllabic group learned a new approach to articulating while the students in the mono-syllabic group practiced a familiar approach. The multi-syllabic group may have scored significantly higher due to a novelty effect of the instruction. The subjects in the multi-syllabic group were verbalizing the syllables as they left the band room for their next class on several occa-
sions. Therefore, the syllables may have served as a mnemonic device in helping those students remember the physiological response better than subjects using the mono-syllabic approach. Additionally, the researcher of the study taught both groups which could have biased the outcome of this study. Being cognizant of this potential threat, the order of the instruction was rotated and the high school band directors alternated in monitoring the instruction. They confirmed that no preference or difference in instruction was occurring except for the aforementioned articulation approaches, multi or mono-syllabic. Recommendations for additional research would include: (a) investigate the multi-syllabic approach with younger and older woodwind students; (b) investigate the multi-syllabic approach using brass students; (c) replicate the current study increasing the number of schools/subjects; (d) investigate the effectiveness of the multi-syllabic approach using both brass and woodwind students from the same band so that a comparison across all instrument types could be made.

**Author Note:** This article is based on the author’s doctoral dissertation, which was directed by Kenneth H. Phillips. The degree was awarded in 1998 by the University of Iowa.

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**References**


Hovey, N. W. (1955). *Teacher’s guide to the clarinet*. Elkhart, IN: H. & A. Selmer Inc.


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