Comparison of Starting Pitch Preferences among Fourth Graders, Undergraduate Music Majors and Elementary Education Majors

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Abstract

The study compared the operant starting pitch of three known songs among 4th graders (n=30), undergraduate music majors (n=30), and non-music majors (n=30) to corroborate that singers distinguished among songs when choosing a starting pitch, and to investigate possible relationships between pitch choice and pitch accuracy. Subjects individually sang "Twinkle, Twinkle Little Star," "Jingle Bells," and "Happy Birthday." Songs were selected based on familiarity and the fact that each started on a different scale degree. Results indicated that all subjects started relatively low in their singing range with chosen pitches clustering about B flat to middle C. Non-music majors selected significantly lower pitches than music majors or children on particular songs, significantly affecting results. Both children and adults appeared to discriminate among songs when choosing a starting pitch. Accurate singers selected significantly higher starting pitches than did less accurate singers. Results are discussed in terms of implications for both practitioners and researchers.

usic educators make use of a wide variety of musical activities in the music instruction of children ne activity singing has been reported by oore to account for at least of music classroom

instruction and is included in virtually every text regarding the teaching of music to children nderson awrence Wade ampbell а b hoksy offer iven the agreement regarding the value of singing in the music education of children it is not surprising that appropriate starting pitches for elementary children is frequently addressed in textbooks nderson ampbell Wade awrence а hoksy et al offer Teachers following these recommendations might be assumed to frequently initiate songs in what common practice says are appropriate keys f the teacher regularly begins songs on appropriate pitches will the student learn to imitate those starting r is selection of starting pitches pitches perhaps somehow related to natural tendencies The answer to these questions would seem to be of interest to researchers in search of data regarding human musical responses as well as to teachers in search of the best data based classroom practices omparisons between adult and child vocal ranges indicated that adults tended to exhibit larger vocal ranges than children Specifically eringer elson and found that adult vocal ranges otska were consistently lower than the vocal ranges of children and that non music majors exhibited vocal ranges of slightly

uhn Wachhaus

less than two octaves

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specific pitches and thus perhaps select those pitch centers uron identified "toneness" as one of perceptual principles and suggested that sounds may be perceived as auditory images specul recorded performance of the subjects that were transferred to an P Pavilion series laptop and were converted to dv format using *Audacity 1.2.3*, audio editing software Starting pitches were determined independently by two experienced music educators using standard equal tempered pianos verified for accurate tuning with an tuning fork Reliability on the starting pitches using the agreements disagreements formula adsen adsen ecause the purpose of the study was to determine general starting pitches no attempt was made to identify the frequency in ertz illian These data allowed examination of subjects' consistency of starting pitch choice among the three songs to determine if individuals tended to select the same pitch or discriminate among songs dditionally these data allowed examination of consistency among other singers within the same group and among the three groups to examine any possible age maturity or musical training factors

Results

The resulting data consisted of the audio recording of subjects' responses bsolute pitch names were converted to sequential integers indicating semitone differences odifying procedure established in similar studies illian eringer elson otska uhn Wachhaus Pantle middle oore b was set to and so forth Pitches below middle were indicated using negative integers Thus below middle and so forth b With regards to starting pitch for the adult male subjects the absolute pitch name was converted ignoring the octave displacement consistent with adult male vocal range or example if an adult male began on octave below middle the integer assigned was Table displays the mean starting pitch for each song across the three different groups

Statistical comparisons were performed using a songs x groups x counterbalanced orders V with

Table

Mean Starting Pitches: A Comparison of Song by Group

Song Title	roup	ean	Std	eviation	N
"ingle ells					
	th rade				

repeated measures on the starting pitch for each individual as the dependent measure nalysis indicated no significant differences among the counterbalanced orders thus that factor was not examined f

or example the range pitch range not vocal range with the most frequentl

pitches vocal training and speaking voice pitch might explain the significant difference in starting pitches between non music majors and children and such research might prove fruitful in identifying the most comfortable place to begin new singers either adults or children and thus be of great interest to practicing educators

Singers did discriminate on starting pitches only two singers started each song on the same pitch leading us to speculate when and how children learned on what pitches a song begins urther developmental studies on the acquisition of this skill appeared in order n this study the highest starting pitches were chosen for "ingle ells" beginning on mi overall mean starting pitch b above middle by all three subject groups very little differences were noted on starting pitch selection for "appy irthday" starting on sol; mean starting pitch b below middle and "Twinkle Twinkle" starting pitch on do; mean starting pitch b below middle espite beginning on different scale degrees the melodies of "appy irthday" and "Twinkle Twinkle ittle Star" began lower and moved upward in the scale This similarity in melodic movement might explain the general agreement among subjects for choosing a lower starting pitch us onl

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oore R S comparative survey of uhn T Wachhaus Pantle undergraduate nonmusic major vocal ranges with textbook song ranges and elementary school students' vocal ranges Journal of Research in Music Education, 27, *Teaching/Discipline: A positive approach for* adsen adsen ontemporary Publishing o educational development. thed Raleigh longitudi, hal study of elementary children's acquisition iller Rutkowski of their singing voices UPDATE: Applications of Resear IIII, C