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PREFACE

The Missouri Journal of Research in Music Education, published by the Missouri Music Educators Association, is devoted to the needs and interests of teachers of music in Missouri and the nation. This issue, Volume IV, Number 3, is the eighteenth to appear in as many years.

The members of the Editorial Committee are grateful to those readers who have written suggestions concerning the content of past issues and request that criticisms and suggestions again be sent to the Editor concerning the content of this issue. We strive for a reasonable balance among music theory, history, philosophy, aesthetics, and pedagogy.

We express our deep gratitude to the Missouri Music Educators Association for their financial support to make it possible to continue to publish the Missouri Journal of Research in Music Education.

The Editorial Board

MUSIC AS REINFORCEMENT IN INCREASING SPONTANEOUS SPEECH AMONG AUTISTIC CHILDREN

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One of the most obvious problems of the autistic child is his inability to express himself verbally. Many of these children are completely nonverbal or offer verbal responses only after much prompting. Inappropriate sounds or verbal responses are sometimes emitted in addition to frequent echolalic responses. Some children speak to adults but never attempt speaking to peers. To increase the frequency of appropriate verbal response would be an appreciable step towards socialization and normalization. Music seems to be an effective reinforcer to increase desirable behaviors among children.

The purpose of this investigation was to compare the average frequency of responses using various types of reinforcement: (1) tokens exchanged for a music session led by a music therapist or a music therapy student, (2) reinforcement of unspendable tokens, or (3) tokens exchanged for a taped music session led by a classroom teacher.

That communication is a prime problem area for the autistic child has been stated in several research studies (Prior, 1977; Provonost, 1961; Euper, 1968; Hargrave and Swisher, 1975; Metz, 1965; Colby and Smith, 1971; Ratusnik and Ratusnik, 1974, Lovaas, 1974). Many researchers also suggest that music is a high interest area among autistic children (Kanner, 1971; Sherwin, 1953; O'Connell, 1974). Behavior modification has been seen as a successful teaching approach when dealing with the autistic child (Lovaas, 1974; Ferster, 1961; Ferster and DeMyer, 1962; Lovaas, 1973). Several studies have utilized music in a behavior modification treatment plan because the behavior modification approach seems to bring positive results and because music has been

proven to be a high interest area among autistic children (Stevens and Clark, 1969; Jorgenson, 1974; Schmidt et al., 1976; Reid et al., 1975). In previously mentioned studies, the teaching during music sessions bore positive results. The present study takes the position that music can be used as an effective reinforcer of previously acquired skills. Little, if any research has taken this approach. The communication goal in this study was to increase spontaneous speech. Subjects could already imitate sounds and words, label things, and obey commands. They were at a level where pronouns, tenses, time and recall were being taught. Spontaneous verbal expression was being encouraged, although little progress was being made previous to the study.

Method

Subjects

The subjects used in this experiment were chosen by a purposive assignment. Ten children from the Sherwood School for Exceptional Children in Kansas City, Missouri were the subjects in this study. These children all exhibited characteristics and behaviors typically associated with autism. Ages of these children ranged from seven to sixteen years and nine of the ten were males. Intelligence levels varied; there was a distribution of below average, average and above average functioning levels. This was based on scores in classroom work compared to general expectations of children of the same age in public schools.

Apparatus

The music room measured approximately fourteen feet by ten feet and was fully carpeted. There was adequate space for all activities to be carried out, yet the room was small enough to provide a feeling of closeness. The only source of distraction to

most of the children was the musical equipment brought into the room by the therapists. Other items in the room were successfully ignored by all subjects except for Subject X. This child sometimes watched people passing in the hallway and on one occasion ran into the pastor's office.

Procedure

In this experiment each subject was used as his own control. Two-week treatment training segments included each of the following types of reinforcements:

1. Treatment A--Tokens were given for spontaneous speech with an individualized pre-established number of accumulated tokens needed to attend music sessions led by a music therapist or a music therapy student.
2. Treatment B--Tokens were given for spontaneous speech with nothing for exchange.
3. Treatment C--Tokens were given for spontaneous speech with a pre-established number of accumulated tokens needed to attend music sessions led by a classroom teacher. The teacher used a specially constructed tape of recorded musical activities in the music session.

Subjects could earn tokens Monday through Friday from 9:00 a.m. until 1:00 p.m. except during lunch and outside play. Classroom teachers reported that lunch and outside play were too unstructured to allow for the accurate observation necessary in the experiment. Tokens could be earned, therefore, only in the classroom setting and were administered by the classroom teachers.

After consultation with the staff of Sherwood Center, a desirable behavior which had a low frequency of occurrence among all subjects was chosen. A baseline was taken of this behavior, spontaneous speech with peers, and it was established as the target behavior of the study. The mean number of baseline responses was less than one for eight of

the ten subjects. The remaining two subjects made less than four responses. A token reinforcement system was designed. In this study the tokens consisted of metal washers which were placed into a clear plastic cup with the subject's name on it. Because the token system was a new process for the students, a training period for learning and adjusting was constructed. A two-week period was used to train the students how to accumulate tokens and how to exchange them for music.

The initial criterion for all students was set at one prompted verbal response per day (one token) to earn the privilege of attending music. Classroom teachers consistently prompted the subjects so that they had the maximum opportunity to earn the one token. Tokens were given immediately after an appropriate response. During the second training week prompting was discontinued for all subjects who had earned at least one token during the previous week. A new criterion was set for these subjects at one unprompted token, while the first criterion was retained for those subjects who had not yet received a token. When these students earned one prompted token, the criterion was immediately changed to one unprompted token. By the end of the second week all subjects had earned at least one unprompted token and were prepared to begin the actual experimentation.

During this training period musical activities were introduced and their reinforcing effect was observed. Activities using musical instruments, activities utilizing movement and songs were selected for use in this study on the basis of the observed outcome. A tightly structured session and simple directions proved to bring about the most successful experiences for the subjects.

After a baseline for the target behavior was established, the token system was trained and effective musical activities found, the actual experiment began. For the first two weeks of the experimental period Treatment A was administered. Tokens were awarded for each spontaneous verbal

interaction. If the criterion number of tokens was met, the subject was permitted to attend a music session led by a music therapist or music therapy student. At the end of that period a two-week vacation from school occurred and no data were generated. When students returned to school Treatment B began. Subjects still earned tokens daily for spontaneous verbalizations with peers, but no music or other reinforcement was available for exchange. After two weeks of this phase of the experiment, Treatment C began. Tokens earned for spontaneous speech could be exchanged for music time as in Treatment A, but the music session was led by a classroom teacher instead of a music therapist or music therapy student. Prepared cassette tapes provided examples of music activities that had been previously used by the music therapist and music therapy students were given to the classroom teacher to use for the two-week period. Some of the selections were from recordings while others were songs sung and accompanied by the music therapist to best reproduce the previous treatment plan. Since the music was provided, the classroom teacher was only responsible for organization and structure of the students. Instructions or supplies were provided by the music therapist for the teacher. Methods of charting behaviors and increasing criteria remained the same as in previous treatments. A final segment of the experiment repeated Treatment A. Again the music therapist and music therapy students led daily sessions for students who had acquired the prescribed number of tokens. Daily charting was kept to record the number of tokens earned, the current criterion, music sessions attended, activities of the music session, and any comments made by teachers or music therapists.

The schedule of increasing the number of tokens required to attend music was: (1) on day one of the experiment everyone earning one token or more was admitted to music, (2) on day two the criterion was set at whatever number of tokens were earned on day one, (3) when that number had been reached for two

consecutive days the criterion was increased by one. This pattern was continued throughout the experiment. A prescribed number of tokens must have been received for two successive days before the criterion was changed to one plus the previous number. Only when the criterion was met were subjects admitted to music.

In this study one registered music therapist and two music therapy students led the sessions. Random rotation of these leaders was used. In this way the effect of the therapist was controlled to determine the effect of music as a reward rather than the therapist who presented it. The same activities were carried out by the registered music therapist and the music therapy students. At least one song, one movement activity and one activity using musical instruments was presented each session. The music therapist demonstrated the activities for the music therapy students before permitting them to lead sessions, so that consistency would be maintained.

The categories or phases of the experiment were: (1) baseline, (2) training of the token system, (3) Initial Treatment A, (4) Treatment B, (5) Treatment C, and (6) Final Treatment A. Charting of the average number of responses of each subject for each phase of the experiment are found in Table 1. Comparisons of the various treatment methods as defined in the hypothesis will show the most effective reinforcers to increase the desired behavior.

To analyze the data, the t-test for related measures was used. The test was used to determine the significance of difference between two correlated means. Results can be found in Table 2. The formula for determining computations was as follows.[1]

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{\frac{\Sigma D^2 - \frac{(\Sigma D^2)^2}{N}}{N\,(N-1)}}}$$

Table 1

MEAN NUMBER OF RESPONSES FOR EACH TREATMENT

Subjects	Base-line	Initial Treat.A	Treat.B	Treat.C	Final Treat.A
I	.00	2.70	.70	1.50	4.30
II	.50	2.50	.77	.77	4.625
III	.00	3.50	1.90	2.70	6.86
IV	.00	8.70	2.25	1.88	6.40
V	.00	12.50	3.30	2.00	9.30
VI	3.66	20.60	7.60	6.77	23.20
VII	.33	1.70	1.50	.40	3.50
VIII	.50	10.90	6.40	3.44	8.78
IX	1.66	6.10	2.20	3.80	7.00
X	.00	4.90	1.40	1.00	5.80

Table 2

t-TEST FOR RELATED MEASURES

Baseline $\bar{X}$	Initial Treatment A$\bar{X}$	t
.665	7.41	4.11**
Baseline $\bar{X}$	Treatment B$\bar{X}$	t
.665	2.80	3.81**
Baseline $\bar{X}$	Treatment C$\bar{X}$	t
.665	2.43	2.67*
Baseline $\bar{X}$	Final Treatment A$\bar{X}$	t
.665	7.98	4.94**
Initial Treatment A$\bar{X}$	Treatment B$\bar{X}$	t
7.41	2.80	3.69**
Initial Treatment A$\bar{X}$	Treatment C$\bar{X}$	t
7.41	2.43	3.51**
Initial Treatment A$\bar{X}$	Final Treatment A$\bar{X}$	t
7.41	7.98	.80
Treatment B$\bar{X}$	Treatment C$\bar{X}$	t
2.80	2.43	.90
Treatment B$\bar{X}$	Final Treatment A$\bar{X}$	t
2.80	7.98	4.25**
Treatment C$\bar{X}$	Final Treatment A$\bar{X}$	t
2.43	7.98	4.33**

**p <.01 *p <.05

The hypothesis, stating that there would be no significant difference (.05 or less level) in the average frequency of response using various types of reinforcements, was rejected. There was significant difference (.01 level) between Baseline $\bar{X}$ and Treatment $A\bar{X}$, Baseline $\bar{X}$ and Treatment $B\bar{X}$, Baseline $\bar{X}$ and Treatment $C\bar{X}$, Baseline $\bar{X}$ and Final Treatment $A\bar{X}$, Treatment $A\bar{X}$ and Treatment $B\bar{X}$, Treatment $A\bar{X}$ and Treatment $C\bar{X}$, Treatment $B\bar{X}$ and Final Treatment $A\bar{X}$, and Treatment $C\bar{X}$ and Final Treatment $A\bar{X}$. There was no significant difference (.05 level), however, between Treatment $A\bar{X}$ and Final Treatment $A\bar{X}$, and Treatment $B\bar{X}$ and Treatment $C\bar{X}$.

The Purpose

The purpose of this investigation was to compare the average frequency of response using various types of reinforcement. All treatments significantly increased the average response of the baseline. The greatest increases were found when music led by a music therapist or a music therapy student was used as reinforcement. There was a significant increase, however, when unspendable tokens were used as the reinforcement and when taped music sessions led by a classroom teacher were used as reinforcement. In summary, the most effective treatment was the final training using music led by a music therapist or a music therapy student as reinforcement (Final Treatment A). Remaining treatments listed in decreasing order of effectiveness were initial training using music led by a music therapist or a music therapy student as reinforcement (Initial Treatment A), the use of unspendable tokens as reinforcement (Treatment B), and the use of taped music sessions led by a classroom teacher as reinforcement (Treatment C).

The Problem

The problem in this study was to determine whether music could be an effective reinforcer for increasing spontaneous speech among autistic

children. All treatments showed an increase in the average number of responses from the baseline. Baseline average was less than one response (.665) whereas all treatment averages were well above this number. What was a near zero daily number of spontaneous speech occasions was greatly increased as a result of the various treatments. More specifically, Initial Treatment A, which used music sessions led by a music therapist or a music therapy student for reinforcement, averaged 7.41 daily spontaneous speech occasions for each of the subjects. Treatment B, which used the unspendable tokens for reinforcement averaged 2.80 daily spontaneous speech occasions for each of the subjects. Treatment C, which used taped music sessions led by a classroom teacher as reinforcement, averaged 2.43 daily spontaneous speech occasions for each of the subjects. Final Treatment A, which was a repeat of the Initial Treatment A, averaged 7.98 daily spontaneous speech occasions for each of the subjects. The most responses were given when the reinforcement was a music session led by a music therapist or a music therapy student. Both the initial treatment and the final treatment produced much higher average responses than the other treatments. The next highest number of spontaneous speech interactions was produced during Treatment B, which used unexchangeable tokens as reinforcement. Music sessions on tape and led by a classroom teacher showed the fewest spontaneous speech occasions. The average daily number of responses for Treatment B and Treatment C was so similar, however, that the difference was not statistically significant.

Discussion

It can be concluded that music was an effective reinforcer in increasing spontaneous speech for these autistic children. All treatments, including the one using unspendable tokens as reinforcement, showed significant increases of responses compared to the baseline average. The treatment utilizing music

sessions led by a music therapist or a music therapy student showed far greater increases than the other treatments. This indicates that musical activities led by a music therapist or a music therapy student were extremely effective in increasing spontaneous speech among the children.

It is interesting to note that unspendable tokens as reinforcement showed greater increases of response than taped music sessions led by a classroom teacher. The tokens themselves, obviously had reinforcing quality. The taped sessions led by the teacher were less appealing to the children than earning the tokens with nothing for which to exchange them.

One of the problems in a field study is that it is not possible to maintain laboratory conditions by which to study the effect of a treatment. Findings, however, are more appropriate because they so nearly parallel real classroom settings. In this experiment what started out to be ten subjects in one self-contained classroom became ten subjects in three different classrooms after the Christmas vacation. Baseline and Initial Treatment A were conducted with all children in one classroom. During the remainder of the study all children were distributed among three separate classrooms. Other variables such as illness of students and teachers, and school cancellations may have caused inconsistencies in the study. In view of these facts, findings must be interpreted with suitable caution.

Music appeared to be reinforcing to the children from the start of the experiment. All children were anxious to attend music; there was not one example of a child who met his criterion and then did not choose to attend music. After tokens were counted and the children were informed if they had accumulated enough tokens to enable them to go to music, reactions to the outcome were obvious. Those children unable to attend often pouted, cried, or quickly began talking to peers, hoping that it was not too late to earn more tokens.

When a child was not permitted to attend music he usually met his criterion on the following day.

The author would encourage replication of this study under more controlled circumstances. If the uncontrolled intervening variables could be accounted for perhaps the results would be altered. Considering the variables in this study though, it still appears that music, led by a music therapist or a music therapy student, was a reinforcing element in increasing spontaneous speech among these autistic children. The target behavior in this study was to increase spontaneous speech. This behavior could easily be changed to any appropriate communication objective that could be adequately observed in a classroom setting. Other variations of the study would be to develop a choice of musical rewards for which to exchange tokens. Perhaps a number of minutes of music listening time could be purchased for a prescribed number of tokens. The effectiveness of music as reinforcement indicates the probability that academic skills as well as additional social skills could be improved with the instigation of music as a reward in a token system.

Footnotes

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A STUDY OF SEVERAL METHODS OF HANDLING THE BOY'S CHANGING VOICE

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The adolescent boy has often been neglected in singing activities simply because the teacher did not attempt to understand or was unaware of the physical and emotional changes taking place. However, many teachers have learned to recognize these changes and have developed methods of stimulation that will keep the boy singing throughout this period of adolescence.

Importance of the Study

The impact of junior high school music experience has a direct relationship to the further musical development of the student. It is hoped that the collection and summarization of material from various sources found in this article will aid in the understanding of the so-called "adolescent vocal problem" and thereby encourage a more thorough junior high music program.

Indications and Characteristics of the Changing Voice

There are many physical changes in the boy's appearance, as well as the vocal changes which occur, that can indicate voice change to the teacher. The wise teacher will watch for these indications and characteristics and use them as a guideline in the planning of his teaching program.

One of the first indications of voice change is in the outward appearance of the boy. His body increases in size--often to the point where he finds it awkward to handle. The body also becomes covered to a greater extent with hair. Changes in parts of the body that produce and resonate sounds

can also be detected. The lips and nose become larger and the Adam's apple appears in the throat.[1]

Mutation may be detected also by the change in the speaking voice. It is often characterized by an uncertainty and lack of control in pitch. A typical example is the boy who has been talking at a fairly uniform level of pitch and suddenly switches to a shrill sound. Often an attempt to avoid speaking in class on the part of the adolescent boy is an effort to cover up for this inconsistency.[2]

Although the indications and characteristics of the changing voice overlap a great deal, there is one aspect of the voice change that is not so clearly indicated. This aspect, the range of the changing voice, must be experimented with and studied carefully in the case of each student. Most vocal music teachers today are followers of either the "alto-tenor" concept or the "cambiata" concept of ranges in the changing voice. The remainder of this section will be devoted to the discussion of these two range concepts.

The Alto-tenor Concept

One method of describing the changing voice is known as the alto-tenor concept. It is based on the idea that as the voice matures the upper tones are cut off and the lower alto tones become broader and more like the upper tones of the tenor voice. From this stage the alto-tenor tones are gradually extended until they become more mature and full sounding. Depending upon the amount of drop in the range, the boy now becomes either a tenor or a bass.

The diagram on the following page shows the various stages of development (range-wise) outlined in the alto-tenor concept.

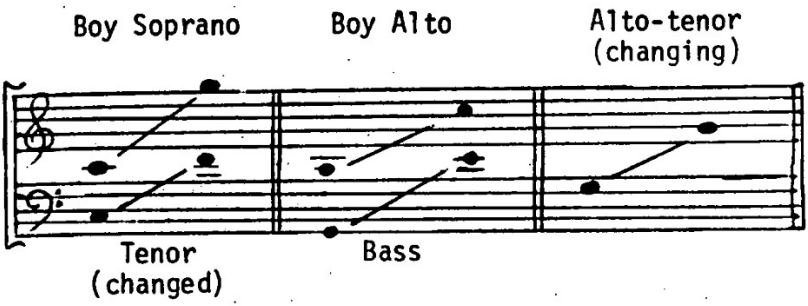


Fig. 1. The alto-tenor range development concept.[3,4]

The Cambiata Concept

The word "cambiata" was taken from the term "nota cambiata" which means changing note. It is used to describe the changing voice by giving it a name of its own rather than by borrowing a part of two other ranges. As with the alto-tenor concept, there are fairly definite range categories. However, the limits are somewhat larger and the voices are classified with a tessitura consideration in mind. The range outside the tessitura is not an especially comfortable range and would not, according to this concept, be used too infrequently.

The ranges identified with this concept are given below.[5]

(small notes indicate tessitura)

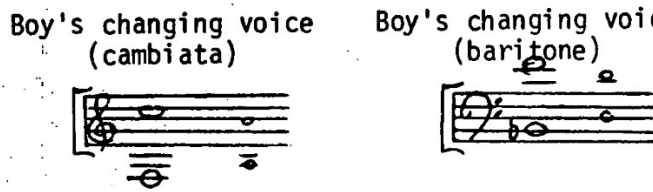


Fig. 2. The cambiata range development concept.

Problems of the Adolescent Boy During the Voice Change Period

Perhaps the word problem has been overused in describing the vocal difficulties of the adolescent boy, for often these "problems" are merely due to a lack of understanding on the part of the teacher. Although the physiological changes that occur cause the voice to change, the accompanying psychological tendencies are to a large extent responsible for the ease or difficulty experienced during this period of change.

The biggest physical problem for boys as they undergo the voice change is the inability to "cope with unison singing outside their temporary range."[6] The range at this stage has become quite limited and the boys are not able to sing outside this range nor are they able to sing at the extremes of the range for a prolonged period of time. As voice mutation occurs, the different parts of the vocal mechanism do not always develop at the same rate of growth. This often results in extreme pitch fluctuations that the singer cannot control.[7]

Self-consciousness

The boy who shoots up overnight in his growth often finds himself unable to control his body with the grace and ease to which he has been accustomed. He may feel that he is "towering over" the rest of his classmates. As a result he may tend to be extremely shy and avoid taking an active part in class activities.

On the other hand, the small boy finds himself in an entirely different position. He feels inferior because he has not developed into a more masculine type. He is often afraid of being labeled "feminine" if he continues to sing when the bigger boys have lost all interest in singing.

The adolescent also undergoes another type of change as he grows. He gains new interests, forms new friendships, and becomes much more interested

in other people. "He becomes a social being instead of an individualist."[8] This, too, is a part of his attempt to focus the attention of others away from himself.

The Non-singer

The "non-singer" is usually an outgrowth of the music teacher's inadequacy to recognize the characteristics and indications of the voice change and work with the student accordingly to keep him singing within the limitations of his ability and range. If the boy is thought of as being a "non-singer" by the teacher or his peers, he will most likely feel ashamed that he cannot do as well as his fellow students, develop a defensive attitude against music, or find other means of music expression such as instrumental music or listening to music--assuming that there are other areas of music available. If he is not able to use one of these means of "escape," he will most likely grow up with an adverse feeling toward music.[9]

Methods of Handling the Changing Voice

There have been a number of methods suggested for the handling of changing voices including that of the old English choirmasters:

> The older plan of training boys' voices, as inherited from the English school of choirmasters, was to keep the boy singing soprano as long as possible and to let the voice "break." Often it broke all to pieces and never recovered.[10]

The methods dealt with in this chapter are those, which are generally accepted by music educators today--those which encourage singing throughout the period of vocal change.

Most problems that occur during the voice change are psychological in nature although they may be traced to an earlier physiological source.

Boys, during adolescence, are striving for a feeling of importance and have a strong desire for achievement and accomplishment. Their attitude at this point can be a crucial factor in the success of the vocal music program.

Creating Favorable Attitudes

Several methods for creating a favorable attitude toward music through the organization of a boys' glee club are suggested by Gehrkens in his book Music in the Junior High School.

1. Consult the high school principal and get him to agree to back your efforts in organizing a boys' glee club.
2. Invite the senior high school boys' glee club to sing at a junior high school assembly--especially if it is a very good club. (If there is no senior club, try to find some other vocal group of men or boys and ask them to sing at an assembly.)
3. Buy a few records of vocal solos by men--especially baritones and basses--and perhaps a few choral records, for use in the General Music Class. Be sure to choose compositions that have virility so that the boys may come to know that manly men sing.
4. Have the boys in the junior high school music class sing by themselves (as a group) occasionally, even though it is only a unison song. (Seating the boys apart from the girls--preferably in front of them--will result in better singing on their part.)
5. Make friends with a few of the most popular boys in the school, ask their advice about organizing a club, and do not announce the project until they feel that the time is ripe.[11]

These ideas could also be used to encourage favorable attitudes toward singing in the general music class.

Achieving and Accomplishing Desires

The desire of the student for achievement and accomplishment is important in the over all educational picture. Music needs to have sound educational values. In return, music can contribute to the general educational development of the individual because the individual can undergo an experience within himself as he strives to understand the feelings of someone else or expresses his own emotions through music.

It is important that the student experience a feeling of accomplishment or achievement in music. In order for this to occur the teacher needs a thorough understanding of the psychological implications and approaches to teaching adolescent boys. Mursell and Glenn, in their Psychology of School Music Teaching, have summarized the psychological aspects of singing, from the standpoint of teaching, in music education as follows:

1. Singing differs from speech primarily in the introduction of fixed pitch levels. Otherwise it is similar, and so modern vocal education must be based on expressiveness, and interest in expressing something, like modern speech pedagogy.
2. The voice involves an extremely complex coordination which cannot be built up piecemeal out of its elements, but must be developed through expressive use.
3. The nervous control of the voice is so extensive and intricate that it really involves the entire personality, which is the true agency of song.
4. Thus our approach to all vocal problems should be personal rather than mechanical.
5. All the various factors on which the control of the voice depends, indicate a personal rather than a mechanical approach. Even the motor factors of breath control, facial

looseness, and placement should be handled through interest in the creation of musical beauty rather than by direct and formal drill.

6. Voice building, or better, voice discovery, should not aim at mechanical precision, but flexible control dictated by musical conceptions.

7. In dealing with the voice of the adolescent boy, the principle of personal approach is of special significance, for otherwise we may sacrifice his musical interests for the sake of ensemble effect, and ruin his voice.

8. School singing is the natural foundation of music education, and has very wide educational values.[12]

It is generally agreed upon that the boy should sing only within his comfortable range. This range is relatively free from tension and an even quality may be developed within this range by using the entire range every day. Two vocalizes which will accomplish this when used for three or four minutes a day have been suggested by Robert M. Conrad.[13]

(Work upward one octave by half steps.)

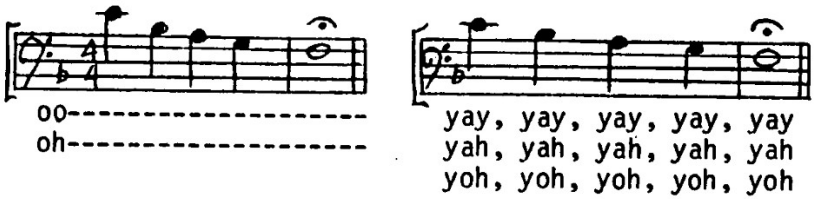
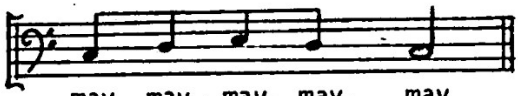


Fig. 3. Vocalizes for the changing voice.

As the voice becomes lower and falls into the classification of a changed voice, it is still necessary to develop this range in a similar manner. However, as Mr. Conrad points out: "As you work the unchanged voice down and the changing voice up, the

natural voice will develop." Therefore, he suggests this vocalize for the changed voice.[14]



may, may, may, may, may
mah, mah, mah, mah, mah
moh, moh, moh, moh, moh

Fig. 4. Vocalize for the changed voice.

Two general concepts of handling the changing voice are commonly used today. These concepts are based upon the classification and range of the unchanged voice. These two concepts which were previously presented briefly (from the viewpoint of range development) in the chapter dealing with the characteristics of the unchanged voice are presented here in more detail as they apply to the handling and classification of the adolescent boy's voice.

The Alto-tenor Concept

Harriet Nordholm and Ruth Bakewell in their book, Keys to Teaching Junior High School Music, suggest the following procedure for classifying the voices:

> Use a song such as "Carry Me Back to Old Virginny" or "In the Evening by the Moonlight." Transpose it to the key of E or E^{b} and ask the boys to sing it in unison. They will automatically sing it in the rang which is most comfortable for them. Some boys will sing it an octave lower; have those boys drop out so that just the high voices remain; then have these high voices sing either of the above songs in the key of B^{b} to further classify them.
>
> A physically mature boy may be an indication of a changing voice. A low speaking-voice may also indicate a change. Other indications of a

boy's voice changing are: (1) the quality of the lower tones becomes richer and thicker, (2) his lower range is extended downward considerably, (3) he is unable to sing the higher tones comfortably.

The boys who were told to drop out while the group was singing should now sing the song in the key of E or E^{b}. It will be noticed that these boys have an entirely new range and quality. The range usually extends from F below middle C upwards an octave plus a fourth (3rd line treble staff). These upper tones do have a soprano quality, but that is still part of the changing voice.

Now organize the boys in these classifications:

First Soprano: Light quality. Range: E (1st line) to G (1st space above the staff).
Second Soprano: Light quality. Range: Middle C to E (4th space).
Alto: Rich, full, vibrant quality. Range A (second line below staff) to C (third space).
Alto-tenor: Rich, mellow quality. Range: F (below middle C) to B (third line).
Bass: Deep and heavy quality. Range: C (second space, bass clef) to middle C.

KEEP THIS VOICE TESTING MOVING RAPIDLY.[15]

The alto-tenor should not be asked to sing unison songs an octave lower. He should be allowed to sing part songs in which his voice part is interesting and often contains the melody. The melody should not be one that moves quickly. The bass parts should also be rather slow moving. They should consist of fourths, fifths, and scale passages. Most important of all, the voices should be retested frequently to keep them singing in the range which is most comfortable.[16]

The Cambiata Concept

This concept is primarily the work of Irvin Cooper. He suggests that the following method of

determining the cambiata voice:

1. Segregate the boys from the girls.
2. Explain to the boys the problem of maturation of their voices and that you are trying to determine what is best for them.
3. Require all boys to sing "Old Folks at Home" in the key of B^b major.
   a. Baritones will sing an octave lower than the rest.
   b. Move around the group and tap the baritones on the shoulder telling them to quit singing.
4. Sing through the song again, with the baritones remaining quiet. This time use the key of G^b major.
   a. Once again move around and tap the boys who are singing soprano on the shoulder.
   b. The remainder of the male voices are cambiati.[17]

Mr. Cooper suggests singing all music in four parts. If music is used which does not correspond to the ranges listed in chapter two of this paper, the teacher should transpose the entire selection. If this is not possible, the parts should be rearranged so they fit the ranges Mr. Cooper suggests.

Summary of the Study

It was the purpose of this study to ascertain an effective means of handling the boy's changing voice by seeking answers to the following questions: (1) What are the characteristics of the changing voice? (2) What are the problems that arise during the period of the voice change? (3) What are some effective means of solving these problems?

The outward appearance of the boy: growth in size, appearance of more body hair, larger lips and nose and the appearance of the Adam's apple in the throat; a lowered pitch in the speaking voice; and lack of control in the speaking voice are characteristic of the changing voice. The development

of the new range during this period may be described by two concepts: (1) the alto-tenor concept and (2) the cambiata concept.

The adolescent boy is confronted with problems which are both physiological and psychological in nature. Many of the psychological problems are an outgrowth of a physiological problem. The boy may be self-conscious about his inability to control his new body and voice or his lack of growth as compared to his classmates, and he usually seeks to become a part of a social group rather than retain his individuality.

The teacher should use psychology in his teaching so that he may understand the boy. He should work toward creating favorable attitudes toward music and encourage the boy to succeed in achievement in music. Singing needs to be done within the comfortable range of the boy.

The teacher can achieve this by testing voices often to determine this comfotable range. Two primary methods of classifying voices are in use today: (1) the alto-tenor concept and (2) the cambiata concept. The teacher can develop these ranges by having the boy use the entire range every day. Part-singing will encourage the use of the proper range better than unison singing which may require some of the students to sing outside their ranges. All music should be selected carefully to be sure that each part lies within the proper range. If some parts do not, the teacher should transpose the selection or rearrange the song so that all parts are within the comfortable range.

Footnotes

1. Peter W. Dykema and Hannah M. Cundiff, New School Music Handbook (Evanston, Ill.: Summy-Birchard Publishing Company, 1955), p. 409.
2. Ibid., pp. 409-411.
3. Karl W. Gehrkens, Music in the Junior High School (Boston: C. C. Birchard and Company, 1936), pp. 73-74.

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6. Ibid., p. 5.
7. Dykema and Cundiff, Handbook, p. 409.
8. John W. Beattie, et al., Music in the Junior High School (New York: Silver Burdett Company, 1938), p. 19.
9. Cooper, Letter, p. 6.
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12. James L. Mursell and Mabelle Glenn, The Psychology of School Music Teaching (Boston: Silver Burdette Company, 1938), pp. 298-299.
13. Robert M. Conrad, "Developing the Boy's Changing Voice," Music Educators' Journal, 50:68, April-May 1964.
14. Ibid.
15. Harriet Nordholm and Ruth V. Bakewell, Keys to Teaching Junior High School Music (Minneapolis: Paul A. Schmitt Music Company, 1953), pp. 90-101.
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THE EFFECT OF TRAINING IN INTERACTION ANALYSIS ON THE VERBAL TEACHING BEHAVIORS AND ATTITUDES OF SCHOOL INSTRUMENTAL MUSIC EDUCATION STUDENTS STUDYING CONDUCTING

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Paper from research conducted at Michigan State University, 1976.

Personnel in teacher training programs who work with university students are becoming increasingly aware of the need for techniques to improve teaching effectiveness. Amidon and Hough have cited three factors in helping young teachers bridge the gap between theory and practice: (1) the teacher must want to improve; (2) there must be a model of the kind of teaching behavior he or she wants to develop, and (3) the prospective teacher should receive feedback regarding his progress toward the teaching behaviors that he or she has conceptualized as a goal.[1]

It has become evident that various college and university teacher education programs have experienced difficulties in helping students translate theory into practice; because much of what is learned in education courses is neither conceptualized, quantified nor taught in a manner that builds a bridge between theory and practice.[2] To be understood, concepts in education must be verified by personal experiences; in turn, field experiences must be efficiently understood by the teacher in order to gain insight into the teaching-learning process.

Interaction Analysis is one technique used in teacher education to improve instructional effectiveness. Although this technique was first used as a research tool, many educators feel that it can be effectively applied to teacher training in a fashion consistent with a philosophy of personal

inquiry. This inquiry involves finding ways of experimenting with, and changing one's own behavior.

Rationale

Teachers have never had an empirically verified instructional theory to serve as a basis for their classroom behavior.[3] Perceptive teachers have sensed that the quality and quantity of teacher-pupil interaction is a critical dimension of effective classroom teaching. Without a theory, teachers on many occasions have been unable to generalize principles of instruction for specific classroom situations. Without objective means, veteran as well as young teachers are not able to capture the phenomenon of the instructional processes, the classroom climate and the possible effects of these on the attitudes and achievement of their pupils.

With the advent of competency-based teacher education, music educators at the college level are forced to take a closer look at scientifically verified techniques to promote the acquisition of teaching skills. These techniques include those of observation, measurement, and evaluation. It would seem that music educators, like educators in other disciplines, will be held accountable for deciding what is to be learned regarding teaching skills in their area. Not only will they be held responsible for what the students are to learn, but also, who should learn it, how, and in what instructional setting (where it is to be learned). It will become necessary to determine competencies in teaching music that are essential for success as a music teacher. For musicians who are accustomed to working with abstract and intangible aesthetic experiences, this task will not only be difficult but also confusing.

The Problem

The traditional method for teaching conducting in college music education curricula has used

methods and texts that stress the authoritarian role of the conductor. These attitudes and procedures are a transference from professional performing organizations, and may not always be conducive to the best educational interest of students in school musical organizations.[4] It is believed by many prominent music educators that teachers of school music groups can encourage students to become more involved in the learning process (rehearsal) by creating a climate for teacher-student interaction.[5] The specific problem undertaken in this study was whether the effects of instruction in the techniques of interaction analysis would make a significant difference in the verbal teaching behaviors and attitudes of prospective school instrumental music education students studying conducting.

Purpose

The purpose of this investigation was to gather and analyze data regarding the effects of instruction in the techniques of interaction analysis upon the verbal teaching behaviors and attitudes of prospective public school instrumental music teachers studying conducting. It is hypothesized that conducting students who are trained in interaction analysis becomes more indirect in their teaching styles, more flexible in their attitudes toward experimental teaching methods, and are consequently better able to use feedback from classroom observations in modifying their own teaching behaviors.

Procedures

The experiment was conducted using music education majors enrolled in Music 335 (instrumental conducting), a required course for instrumental music education and music therapy majors at Michigan State University. Fifty-two (52) students were randomly assigned to one of the two sections. Section A (N = 27) was designated the control group and section B (N = 25) was designated the experimental group. The experimental group was taught

by a professor in the music education department. Each section met five periods per week each lasting one hour in length.

The means of obtaining the data on the conducting student's verbal behavior at the end of the experimental period was the Rehearsal Interaction Observation System (RIOS), the same instrument used in the training of students in section B. This system was developed by Professor Robert L. Erbes of Michigan State University. The control group (A) studied the required conducting text and was subjected to the traditional (conventional) method of teaching conducting. The instructional mode was geared to the technical and physical aspects of conducting. An additional ten hours of conducting was added to the course requirements. The experimental group (B) used the same required text, similar teaching methods, and the same course content as section A. Instead of ten additional hours of conducting experience of section A, group B received ten hours in the theory, technique, and application of interaction analysis. Both sections were informed that the term's work represented a normal part of the conducting curriculum.

Group equivalency was established by administering two attitude scales. The Rokeach Dogmatism Scale Form E, and the Education Scale were administered to all subjects during the first class meeting. The Dogmatism Scale was used to study verbal behavior relative to a person's personality. It measures the openness and closedness of one's belief-disbelief system. The Education Scale served as a pre-post measurement of attitude toward traditional and progressive educational practices. The experimental design used in this study was the pretest-posttest control group design described by Campbell and Stanley.[6] A feature of the pretest-posttest control group design is that it provides for the control of all eight factors joepardizing internal validity.

The treatment consisted of one hour per week in the following activities: (1) Reading and discussion of interaction theory and application;

(2) learning of the categories; (3) coding practice using 3, 5, and 10 minute tape segments and (4) plotting matrices, computing and interpreting the data from the practice tapes. During the final week of the experimental period, each student from both sections participated in a 10-15 minute conducting and rehearsing a junior high school band. Each student's verbal interaction was recorded by the researcher and an expert in the RIOS technique.

At the end of the ten weeks, the two attitude scales were readministered to the total sample population. The data were subjected to the appropriate statistical treatment.

Findings

Descriptive data for the sample on the Dogmatism Scale showed no appreciable difference in either central tendency or variability between the two groups. While some difference was noted in both the mean and variance on the Education Scale, it was not found to be statistically significant (Table 1).

Table 1

Pretest Means and Standard Deviations for the Experimental and Control Groups on the Two Attitude Scales

Control Variables	RIOS Group (N=25)		NON-RIOS Group (N=27)	
	Mean	S.D.	Mean	S.D.
Dogmatism Scale	77.160	9.551	77.551	10.493
Education Scale	36.800	10.271	33.407	7.657

Table 2 shows descriptive data of the results (posttest) for the experimental and control groups on the Dogmatism and Education Scales. A comparison with pretest scores indicates both shifts in

later central tendency and variance values. Of particular note, perhaps, is the increase in variability on dogmatism for both groups. The lower mean scores on dogmatism indicate a greater degree of openmindedness evident in both the experimental and control groups, but to a degree in the experimental group.

Table 2

Posttest Means and Standard Deviations for the Experimental and Control Groups on the Two Attitude Scales

Control Variables	RIOS Group (N=25)		NON-RIOS Group (N=27)	
	Mean	S.D.	Mean	S.D.
Dogmatism Scale	69.593	11.081	72.960	11.319
Education Scale	33.960	8.965	31.593	7.094

To find out how well the experimental group had learned the techniques of interaction analysis through application of the RIOS technique, a final test was given to group B. This test consisted of viewing and coding a thirty-five minute video tape of a school instrumental rehearsal. Analysis of variance for the twenty-five (25) subjects of the experimental groups showed a reliability coefficient of $r = .943$ (between individual observers), and a reliability coefficient of $r = .812$ (for the average observations).

Hoyt has shown that reliability estimates can be obtained from analysis of variance components. While there seems to be no difference in this concept as applied to ratings, observations or to test scores, there is a difference in the data on which the computations must be based. The rationale for this formula will illustrate its application and why the results do not agree completely with those

from other procedures intended to serve the same purpose. This procedure is explained in an article by Ebel.[7]

Table 3

An ANOVA Reliability Estimate for the RIOS Conductors on a 35 Minute Video Tape Test of Observer Agreement (N=25)

Source of Variation	Reduced Sum of Squares	Degrees of Freedom	Mean Square
Grand Mean	20838.334	1	20838.333633
Total	50928.236	299	170.328550
V	48164.556	11	4378.595961
S	.031	24	.001272
S	2763.650	264	10.468372

The intraclass reliability formula =

$$\frac{MSV - MS\ error}{MSV + df(A) = MS\ error}$$

$$r = \frac{4378.595 - 10.468}{4379.595 + 24 \times 10.468} = \frac{4369.128}{4629.828} = 0.9435$$

$$\text{reliability of average} = \frac{4378.595 - 10.468}{5378.595} = 0.812$$

To test the effect of the four selected divisions of verbal behavior and the raw data concerning the attitude scales, the raw data were summed for each of the eleven categories and the pre and posttest scores on the two attitude scales were subjected to a multivariate analysis using a

repeated measures design. For this analysis, both the experimental and control group must contain even number of subjects. The necessary number of subjects was eliminated from both groups by random selection.

There were significant differences for the main effect by groups and main effect of Dogmatism (to be expected because of dichotomization). The remaining side effects and interactions reported reveal no significant F ratios.

The individual categories within the major divisions were summed to give four composite scores: (1) Direct Teacher Talk (Nonsupportive); (2) Indirect Teacher Talk (Supportive); (3) Student Talk, and (4) Silence or Confusion. Table 4 presents the data for the four selected divisions of verbal behavior. As the conducting students and performance groups in both sections were observed in a ten minute rehearsal segment, the data were entered on a composite table for tabulation and statistical treatment.

Table 4

A Comparison of NON-RIOS Trained Conducting Students and RIOS Trained Conducting Students on the Frequency of Three Selected Divisions of Verbal Behaviors

Division of Verbal Behavior	Section A NON-RIOS Conductors (N=24)		Section B RIOS Conductors (N=24)	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Teacher Talk				
Supportive Behavior (Categories 1, 2, 3)	8.4	2.9	6.1	2.4
Non-supportive Behavior (Categories 4,5,6,7,8)	73.2	8.5	73.8	8.6
Student Talk (Categories 9, 10)	6.4	2.5	3.7	8.6
Silence or Confusion (Category 11)	6.7	2.5	8.2	2.9
	(not a part of the study)			

An interesting and significant F ratio is noted in categories 9 and 10. Student Behavior when tested with dogmatism for unique interaction reveals a relationship between the amount of student behavior and the level of openmindedness as measured by the Rokeach Scale ($F = 5.160$, p .02).

The final statistical treatment of the variables in this study was the Pearson Product-Moment Correlation. While one statistically significant correlation appears between Grade Point and Dogmatism (-.36), there is no evidence of any other significant relationships among the variables.

Summary

The study attempted to test seventeen hypotheses. The null hypotheses rejected at confidence level of .001 or better are included in this summary. *Null hypothesis one* was rejected at the .001 confidence level indicating there was a significant difference between conducting students trained in interaction analysis and those not trained in the amount of verbal talk. *Null hypothesis two* was rejected at the .0001 confidence level. The finding indicates a difference in openmindedness between the RIOS and NON-RIOS conductors. RIOS training does, in fact, cause the student to be more introspective and sensitive to his effect on other people, therefore bringing about change in basic beliefs. *Hypothesis number eight* was rejected at the .0001 confidence level. A multivariate F test was performed on three test variables and the interactions between the variables. There was a significant difference in the amount of direct teacher talk of conducting student trained in the RIOS technique and those not so trained. *Null hypothesis nine* was rejected at the .0001 confidence level indicating that there was a significant difference in the amount of indirect teacher talk of conducting students trained in interaction analysis and those not receiving the training. A significant difference did exist in the amount of student talk in rehearsals led by conducting students trained in the RIOS technique and those students not receiving the training,

therefore *null hypothesis ten* was rejected. The *eleventh hypothesis* was rejected at the .0001 level of significance. This finding is in keeping with the last three rejections since it represents data that are summative from the last three hypotheses, that the RIOS training experience does significantly affect the verbal conducting/rehearsal behavior of the young conducting students in this study.

Conclusions and Recommendations

The data presented in the findings of this study indicate a clear trend with respect to differences in types of verbal behavior used by students trained in interaction analysis and those not trained. On the basis of these data the conclusions are as follows:

1. Students trained in I.A. using the RIOS used more indirect verbal behaviors and less teacher-centered behaviors in their rehearsals.
2. RIOS conductors were more consistent in their behaviors by displaying a greater balance between direct and indirect verbal statements.
3. Conducting students trained in interaction analysis used verbal behaviors that have been found to be associated with higher pupil achievement and more positive attitudes toward school.
4. The Non-RIOS trained conductors spent more than 30%-40% of the rehearsal time in categories 4 and 6 combined (informing and directing).
5. The Non-RIOS trained conductors were found to be more direct in their teaching than the RIOS trained conductors.

These findings are consistent with other findings and the notion held by many school instrumental music teachers that instrumental music teachers can create a climate for free student-teacher verbal exchange in the rehearsal setting.

Recommendations

From the analysis of the data from the study the following are suggested recommendations:

1. The teaching of interaction analysis techniques as part of the regular conducting requirements.
2. The traditional teacher training process be altered so that prospective instrumental teachers might be placed in contact with students in large group rehearsals before student teaching or during the terms in which their method course requirements are being fulfilled.
3. Further replication of this research be done at Michigan State University and other teacher training institutions using the RIOS system and videotapes as a training technique for public school vocal music conductors.
4. A correlation study should be carried out involving various selected dimensions of verbal behavior, score reading (error detection) and interaction analysis training in order to find the possible relationship between each variable and teacher competency.
5. Student outcomes under conductors with varying interaction patterns should be studied.
6. Similar studies should be conducted in other areas of music, such as choral, small ensembles and possibly general music.

Finally, the conclusions of this study indicate that the observable aspects of large group music instruction can be altered through training. Therefore, prospective instrumental music teachers who become aware of their verbal teaching behaviors can benefit from Interaction Analysis and thus increase teaching efficiency and, hopefully, student achievement.

Footnotes

1. Edmund Amidon and John B. Hough, eds., Interaction Analysis: Theory, Research, and Application (Reading, Mass.: Addison-Wesley Publishing Company, 1967), p. 252.

2. Ned A. Flanders, "Intent, Action and Feedback: A Preparation for Teaching," Interaction Analysis: Theory, Research and Application, ed. Amidon and Hough (Reading, Mass.: Addison-Wesley Publishing Company, 1967), p. 283.

3. Amidon and Hough, Interaction Analysis, p. 2.

4. Charles Leonard and Robert W. House, Foundations and Principles of Music Education, 2nd ed. (New York: McGraw-Hill Book Company, Inc., 1959), p. 230.

5. Ned A. Flanders and Edmund Amidon, The Role of the Teacher in the Classroom (Minneapolis: Association for Productive Teaching, Inc., 1967), pp. 72-85.

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THE CHILD-CENTERED VS. THE ADULT-CENTERED RATIONALE--A DUALISTIC APPROACH TO THE USE OF PHILOSOPHY IN CURRICULUM DEVELOPMENT WITH SPECIAL APPLICATION TO MUSIC EDUCATION

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Introduction

There is an apparent controversy which has existed among music educators for many years concerning the basic criteria to be considered when dealing with the organization of curricula. As a result of this controversy, a certain degree of complexity in educational thought has become the norm as has been exhibited in various texts which treat the development of curricula as well as the actual curricula which have been historically developed.[1]

Some of the major issues which have motivated these crucial differences among educators involve the answers that have been given to the following questions:

1. Who or what should be the organizing center of the curriculum?
2. What are the requirements or principles of the organizing center upon which the curriculum is to be considered?
3. What is the nature of the attitudes, skills, and knowledge to be learned?

Differences in the three issues outlined above can be said to have their origin in those political, social, religious, and economic trends that continuously and variously influence the said issues, and, as a corollary, whose answers can be clearly recognized as being the major factors which are subsequently reflected in not only the approach taken to the development of the various curricula, but also

in the resulting methodology and pedagogy which is used in the execution of those curricula.

As will be observed in the following paragraphs, controversy in educational discourse is that phenomenon which, in fact, undergirds the decisions taken regarding these above issues. Moreover, it is such controversy that most often causes the basic conflict in the priorities taken concerning the major aims and objectives of any educational curricula and that determines the material which is contained in it.

However, this controversy can be reduced and categorized in terms of two points of view which can be considered as the very essence from which the plethora of educational theories, used by those persons involved in the development of educational curricula, have stemmed.

This paper begins by giving a brief account of the early development of the curriculum in this country as a means of making the reader cognizant of the numerous theories that have come to the fore in an attempt to provide a solution to the basic questions surrounding the development of educational curricula as outlined in the initial paragraphs of this study. Such background will serve to bring into focus the controversy that has existed and still exists in this area of education. We shall then present the two points of view referred to above, since we believe that they, whether taken consciously or unconsciously, represent the adoption of contrasting a priori elements basic to the direction the development of curricula has taken in past years. These points of view will in turn be related to two of the major philosophical approaches historically accepted as basic views that have been utilized in the development of various educational curricula in order that we may see their relationship to the two categories here proposed. Finally, we shall look at this system as it concerns the specific area of music education and its supporting curricular ideologies and methodologies.

These viewpoints have in passing been referred to by several writers as the child-centered and the adult-centered rationale for curriculum development.[2] Such terminology will be employed throughout the remainder of this paper in which our primary aim will be to facilitate the task of the educator by providing him with a theoretical approach for disentangling the host of philosophical theories--a task which is necessary if the curriculum is to be cogently and successfully constructed.

Historic View of Curriculum Development

Until the time of the historic social and industrial revolution that occurred during the late nineteenth and early twentieth century, the curriculum was thought of and written of as a fairly static solution to the needs of social systems. Since the social systems were subject to relatively slow change, the curriculum could, without difficulty, be worked out as a definite solution to the educational problem of a given society. The concept of the curriculum as a constant and perfectable instrument was accepted and acceptable. As a result, we note here that status rather than change dominated educational philosophy and practice, a condition which is quite the reverse in our present times.[3]

The revolutionary changes that took place in the latter part of the nineteenth and the first part of the twentieth century however, were so violent and sudden that they evoked not only a change in the methods of manufacturing goods but also in the basic social institutions and processes--notably the school and the church. Educational change henceforth became a constant in societies in the sense that form and content were continually changing to some extent. Nevertheless, those educational leaders and advocates of the system as it existed prior to this time considered change as a negative factor and, as a consequence, proceeded to use as the primary basis for the establishment of schools and school systems, the already existing

philosophical thinking along with the regularization of current curricula and the perfection and spread of traditional practices of teaching.

The twentieth century, on the other hand, with the turbulent changes brought on by the newly industrialized and urbanized society, seriously challenged the validity of the school curriculum. The usefulness of the traditional elementary school curriculum, for example, which was based on the simplest elements of moral training and literacy skills--the 3 R's as they were so commonly referred to--began to be questioned by many people. Even more vigorously criticized was the college-preparatory curriculum of the secondary school.[4]

Moreover, the development of experimental psychology and educational philosophy in the early decades of the twentieth century had a definite impact on the processes that obtained in the school and the classroom as well as on educational objectives and curriculum patterns. The result of these developments was the widespread modernization of curricula. This formed one of the several components of the Progressive Education Movement, a movement which came into focus during the years subsequent to World War I and led to what was considered to be the initiation of a more rational approach in educational planning and curriculum development.

Cremin comments about the initial stages of this movement when he states that:

> Actually progressive education began as a part of a vast humanitarian effort to apply the promise of American life . . . to the puzzling new urban-industrialized civilization that came into being in the latter half of the nineteenth century. The word Progressive provides the clue to what really was: the educational phase of American Progressivism writ large. In effect, progressive education began as progressivism in education: a many-sided effort to use the schools to improve the lives of individuals.[5]

It is to this point that we wish to address our discussion since it was to the philosophy of this particular movement that we have credited many of the various contemporary ideologies which are currently held in regard to the development not only of the general educational curricula, but of music educational curricula as well.

A more detailed explication of the constituent elements of the Progressive Education Movement is provided in the statement by Schaeffer who outlines certain of its salient characteristics as follows:

> (1) that education must take into account the developmental needs of children, (2) that learning cannot be externally imposed but must involve activity of the mind of the learner, (3) that knowledge is gained through participation in activities of social life, (4) that education must take into account the needs of society, (5) that the curriculum and the teacher must take account of individual differences in the learners, and (6) that curricular decisions may be improved by the application of the scientific method.[6]

These factors which have been outlined by Schaeffer can be thought of as comprising that approach to education which is characterized by a keen interest in the developmental needs of the child. It is this aspect which not only characterizes the major focal point of the entire Progressive Education Movement, but also serves as a factor in education which provided an alternative approach to curriculum development and as such which paved the way for the apparent schism in the attitudes and values that were subsequently adopted by educators, administrators, teachers, and curriculum developers. As a result, such a schism becomes a crucial concern to the educator when deciding whether or not he should adhere to the more traditional ideology of education which seemingly places its major emphasis on all else save the consideration of the felt needs of the child, or whether he should follow the more progressive views that emphasize that the

developmental needs of the child be given priority in the construction of the curriculum and its accompanying principles, guidelines, aims and objectives. In the following pages we shall discuss this apparent schism in terms of the two approaches that were mentioned earlier in this article--child versus adult-centered rationale.

Adult-Centered Rationale

The adult-centered rationale is based on the conviction that, if the child is to develop into a civilized human being and a useful citizen, he must first be disciplined by means of methods and materials selected with reference to the standards of adult society rather than the felt needs or interests of children.[7]

As a corollary of the above, an adult-centered curriculum would focus upon enabling the child to acquire the needed tools to participate in the already established society and with providing the means for the child to become familiar with the greatest ideas and objects that man had created.[8] The major objective of one who has developed this rationale, is that the child must become that type of adult desired by society and in order to do this, he should acquire the outlooks, knowledges, and skills needed to exhibit these qualities.

William T. Harris, one of the first American educators and philosophers, concluded that "the school is an agent for preserving inherited values and adjusting man to society."[9] According to Harris and subsequent advocates of this particular type of program, in order to accomplish the desired objectives, the curriculum should consist of logically organized subject matter, selected by adults. One of the major functions of the school is to transmit impartially and objectively this verified knowledge regardless of whether the subject matter offered is of immediate value to the student or not; for knowledge, if properly stored, will inevitably be retrieved for subsequent usage. In short, future goals are expected to supercede present needs.

Therefore, the primary content of any curriculum contains what the student should learn and emphasizes even further, what he must learn. The subject matter content is based upon the logical sequence of solid subjects which are relatively unchanging and do not depend, to any great extent on a changing society. If we observe the Colonial period in our history for example, we find that religious subject matter received primary attention when considering the program of study. It was important that the child be given an education that would mold his entire character into that desirable by the particular society in which he would someday serve as an important part. Consequently, when viewing an early colonial curriculum, emphasis is placed on reading, writing and arithmetic. The main objective in education was to prepare the individual, through a process of familiarization with the content of the Bible, to become that kind of citizen whose character, outlook, and values were molded by the doctrinal stipulations of that Book.

If examined historically, the adult-centered rationale behind curriculum development becomes evident in the beliefs concerning man's nature, which are discussed by the two dominant traditional philosophies, Platonism and Aristotelianism.[10] These two philosophies posited the concept of man's dual nature by considering that man is composed of body and soul or mind. The mind, according to these philosophies, is the knowing aspect of man's nature and is thus superior to body (matter), both as to its nature and its governing function, in spite of the Greek and Roman notion of mens sana in corporo sano.[11] The grasp of this belief is essential for understanding classical education as well as current educational conservatism which, in essence, are both based on an adult-centered rationale for the construction of its curriculum. This view asserts that only "academic subjects" are worthy of the name education; any activities involving the body--such as manual skills, crafts, and vocational preparation,

are not education but training. Only activities of the mind designed to develop the rational part of the person are the most truly educative.[12]

Another belief espoused by some conservatives which appears important to the examination of the origin of the adult-centered rationale for the development of curriculum, involves the fallen nature of man. The view that man is a very important being played a major role in the school's attitude toward pupil behavior. Obviously, as a result of this thinking, the child would not be allowed to do just as he pleased, since he would often choose evil rather than good.[13] One of the chief supporting statements for this perspective of curriculum development is advanced by Horne who wrote:

> It is better to center education in ideals for children and the race rather than in children themselves. After all, children are immature, dependent, and plastic members of the race . . . Ideals are the norms for all human experience, including that of children.[14]

We might conclude that under a traditionally conservative type of curriculum, the major goal is the development of an individual who can adapt to the idealistic society by way of being programmed through the aforementioned processes. The process of learning has been primarily, though not exclusively, one of "absorbing" knowledge to the limit of one's capacity. In this way, learning is designed to give structure to what formerly was in chaos. The ever-increasing acquisition of this concrete, solid, and unchanging subject matter, presented in a logical sequence, may not seem relevant until the individual has matured to adulthood. However, this method of approaching the education of the child, forms, in effect, the major premise of those who espouse the adult centered rationale to curriculum construction and provides the cornerstone of their philosophical objectives.

Child-Centered Rationale

The advocates of this group take an almost diametrically opposed view towards the formulation of curriculum ideals. The ultimate purpose of education in a democracy, they argue, is the development of the individual. There appears to be at least two significant variants to this theory. The first holds, in effect, that the primary purpose of education is that of preparing the individual to achieve maximum social and economic success. This differs from the adult-centered perspective in that it seeks to utilize public education as a means of aiding individuals to rise above the social and economic status in which they would undoubtedly remain if guided by an adult or society-centered program. The second point of view is rooted in the individualistic conception of democracy and therefore is that variant which is most commonly considered as the "child centered school." It holds that education, in both purpose and content, must be based on individual needs, capacities, and interests primarily in terms of economic and social success.

The proponents of this school argue that an education built upon adult purposes and interests is inadequate. Children are not considered as small and immature adults as earlier implied by Horne, but persons in their own right. As such they have capacities, needs, interests, and purposes of their own, which can be ignored only at the risk of retarding the development of intelligent and healthy personalities. Hence, the educator must realize and recognize that the needs and capacities of children are different from those of adults. Moreover, this group contends, that, while these capacities, needs, and interests exist among children at various levels of maturation, it is true that every child is in some sense unique. Children, as well as adults vary widely in their interests, abilities and temperaments. To insist that every child pursue the same educational program is committing a crucial error in the development of that child-

Accordingly, the child-centered educator argues that the curriculum can not be derived

solely from the demands and requirements of a relatively unchanging society without doing damage to the normal processes of maturation and to the facts of individual differences. Learning properly understood, is not a mastery of the product of other people's learning but progressive growth in the intelligent direction of purposeful activities. The heart of the curriculum should therefore consist of a wide variety of purposeful activities based on the present capacities, interests, and needs of the learner. The demands and requirements of society must naturally be taken into account and the educator must never forget that his primary duty is to help the child as a member of society, at any stage of development, in order that his capacities and abilities may reach their fullest potential.[15]

A brief background of the child-centered rationale. A definite movement towards the child-centered rationale is said to have begun with Jean Jacques Rousseau (1712-1778), who was among the first to advocate that consideration be given to the nature of the child. In opposition to the conservative view of the fallen nature of man, the imperfection of man, and the need for the control of the activities of the child, Rousseau emphasized that, "God makes all things good,"[16] therefore man is by nature good. Hence, according to Rousseau, in the early development of a child, the main contribution that the schools should make is to see that the child is not "spoiled" by formal education.[17] The educator should view the beginning stages of education in terms of experience--the means by which a child may best learn.

Johann Heinrich Pestolozzi (1746-1827) was also instrumental in fostering development of the child centered movement. He felt that education consisted of guiding children into a natural and orderly unfolding of their innate capacities. Not only did he believe in the adaptation of teaching materials to the child's ability level, but also in the adjustments of pedagogy to fit the ability and maturity of the student.

Perhaps the most important contributor to the child-centered movement is John Dewey. Dewey has been recognized as the "Father of Progressive Education."[18] The purpose of education, according to Dewey, was growth. The inquiring and reflective mind were the goals of his educational program, and no fixed habits or values were to be allowed to hinder this growth. In summary, the salient concepts associated with John Dewey which concern us here are:

1. The school curriculum should emphasize activities that cause children to work with "hand and brain."
2. The democratic way of life is the best way, for it allows for the full development of all individuals, and all individuals are of value.
3. The school should become a miniature community with the same sources to stimulate and interest the youngsters.[19]
4. The scientific method should be a basic concept in curriculum construction.
5. Truth is flexible.

Dewey further states in support of his concepts concerning the growth of the child that:

> Growing is not something which is complete in odd moments; it is a continuous leading into the future. If the environment in school and out, supplies conditions that utilize adequately the present capacities of the immature, the future which grows out of the present is surely taken care of.[20]

The Philosophy of Pragmatism

We shall continue our discussion by treating Pragmatism, an essentially American philosophy which parallels in its educational aspects the following characteristics of the Progressive Education ideology. Like the movement, it had its focus on experience-centered type curricula and

broke away, at least theoretically if not practically, from the traditionally-Europeanized-authoritative type of methodology. The choice of Pragmatism is substantiated by the fact that its doctrine holds, in essence, that a statement can be found true only when and as it is found workable in action. In other words, it is said that a pragmatist in education is one who believes primarily in "learning by doing."

Although the scholars who have been firm in their positions toward this particular philosophy have not necessarily been in total agreement with one another, the writer wishes to point out that the general scope of this particular paper does not allow for an in-depth examination or explanation of every position which has been held, past and present, by the numerous educators who have at one time or another in their careers, adhered to the pragmatic doctrine. We, however, shall proceed by outlining certain germane ideas which are common to those educators who are advocates of this theory. Their unanimity can be more clearly understood if we first clarify the pragmatic opinion on what it means to act intelligently, or in other words, a more sophisticated means of asking: What is meant by "learning by doing?" McMurray explicated his views on this matter when he outlined:

> To act intelligently is: (a) to act deliberately, with awareness of justified intent; (b) to act in the light of consequences foreseen; (c) to control one's immediate feelings and desires in their effect upon conduct by consideration of longer range desires and goals.[21]

From this it can be concluded that pragmatism is a theory about human action as guided by cognition of consequences, a theory of deliberate or rational self-control, of intellectually achieved continuity in behavior. The writer however wishes to add to this definition that, the very essence of pragmatism, as developed and envisioned by such pioneers as Pierce, James, and Dewey, lies in the

concept that ideas are instruments for change and that if an idea does not bring about some kind of change, whether it be in the mind of the person or society in general, then that idea is not an idea worthy of consideration and in fact should not be thought of as an idea at all.

It is moreover the continual reorganizing, restructing, and transforming of experiences that is essential to the pragmatic concept of growth and development. Regarding the first of these--the aspect of organization--James wrote:

> Education, in short, cannot be better described than by calling it the organization of acquired habits of conduct and the tendencies to behavior.[22]

Dewey reinforces this idea when he states:

> We thus, research a technical definition of education. It is that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience.[23]

Hence, it can be seen that the pragmatic view held toward the concern for growth in education is quite similar to those views held by those educators who propose that the child be the focal point of the curriculum. The relationship between the pragmatist's point of view and the child-centered approach is emphasized by Don Chen-Chu when he writes:

> Pragmatists are united in the conviction that each child is a unique being and each unique being is born with multi-potentiality. Each child should be nurtured and should grow systematically in all aspects to the maximum. Physical, mental, social, moral, and spiritual elements are all important, and each should be fully developed.[24]

Even though the emphasis placed on developing the child as a whole, as evidenced by the above quotation forms the major focus of the child-centered approach, pragmatists also give much

attention to the society of which that child is a part. About this relationship between the child and the society Dewey writes:

> . . . the primary basis of education is in the child's powers at work along the same general constructive lines as those which have brought civilization into being.[25]

Thus it can be said that a pragmatic curriculum is grounded in the needs and the interests of a child's life, a concept to which additional weight is given by Kilpatrick who poses the rhetorical question:

> How shall we understand the term curriculum? It is the whole living of the pupils or students so far as the school accepts responsibility for its quality. We are thus back again to living and its quality.[26]

He further comments, "I would have the school start with its children wherever they are and help them first, to get the wholesome and vigorous living under way."[27] The results of these observations are evident in Kilpatrick's program which he called the "emerging curriculum." There he carefully outlined the pragmatic ideas concerning curriculum as follows:

> . . . I should have the school work at all times, in season and out, (1) to raise as best it could the quality of living at each age level; (2) to make this actual living grow up into all-round living . . . (3) to develop the creative aspects of living as the finest single test of success.[28]

Now that we have clarified the concept of a child-centered curriculum through reference to the observations of the pragmatists cited above, we shall continue by pointing out that the child's personal experience is also of great significance to the school program. As initially stated, the curriculum is any experience that is educative and in which the best subject matter is genetically and vitally derived from and integrated in the experience of the learner. The real essence of

curriculum, according to Dewey, is that of "moving from the child's present experience out into that represented by the organized bodies of truth that we call studies." Regarding the utmost significance of experience, Dewey stated that:

> The positive principle is maintained when the young begin with active occupations having a social origin and use, and proceed to a scientific insight in the materials and laws involved, through assimilating into their more direct experiences the ideas and facts communicated by other who have had larger experiences.[29]

The role of experience in the pragmatic curriculum. Having established the important concern for experience as a necessary component to the pragmatically based curriculum, we are now ready to ask the question? What kind of life experiences of the child are considered most essential? Pragmatists state definitely that it is the "social" experiences of the child's life. Regarding social experience, a central element of the curriculum, Dewey comments that: "The subject matter of education consists primarily of the meanings which supply content to existing social life. The continuity of social life implies that many of these meanings are contributed to present activity by past collective experience."[30] In order to better understand Dewey's ideas on social life and curriculum, we should note that, ". . . the social life of the child is the basis of concentration, or correlation, in all his training or growth. The social life gives the unconscious unity and the background of all efforts and of all his attainments."[31]

Taking into consideration the fact that pragmatists, being truly "practical" in their outlooks toward life in general, tend to build their curriculum admittedly on the every day needs of the students in the society, we shall therefore discuss their support of the utilitarian curriculum. According to the pragmatists the basic question that must be answered practically when dealing

with a curriculum of this nature is: Does it help the student live more successfully, adjust more adequately to the demands of life?"[32]

Furthermore, a pragmatic curriculum is used for problem solving. What the pragmatists ask of the curriculum is that new techniques for new life problems be developed. All subject matter therefore should provide the teacher with opportunities for training the pupil in scientific thinking for problem solving. Thus, the curriculum that is made up in advance is not considered a curriculum, but rather a mere course of study or suggestions of things that might be studied. The real curriculum is what knowledge the children use to solve problems; it is a curriculum in action. Information becomes knowledge when it is used to solve problems.

For a clearer understanding to the utilitarian or pragmatic curriculum, we should note that pragmatists start work from things that are meaningful to the child. They look beyond the immediate and concrete. As McMurry wrote:

> . . . a good school program is one which leads from an early interest in solving problems of an immediate, localized and concrete sort to a more mature interest in solving problems which arise through intellectual curiosity and a desire for abstract knowledge.[33]

Lastly, the pragmatic curriculum is experimental. In criticizing the static curriculum Dewey wrote:

> Learning here means the acquisition of what already is incorporated in books and in the heads of the elders. Moreover it is that which is taught as a finished product, with little regard either to the ways in which it was originally built up or to changes that will surely follow in the future. It is to a large extent the cultural product of societies that assumed the future would be much like the past, and yet it is used as educational food in a society where change is the rule, not the exception.[34]

The pragmatists would therefore, according to the criticism of a static curriculum as expressed above, avoid in curriculum construction, the rigid requirements, inflexible boundaries, mechanical standards and preconceived solutions. They instead would propose a changing curriculum, because society continually faces new cultural, social, vocational, and psychological needs.

Conclusion. It should therefore be evident from the above discussion that the pragmatist's approach to education and hence its view of curriculum construction falls squarely within the category which we have defined as child-centered. The emphasis placed on developing the child as a whole, which forms the major focus of the child-centered approach is clearly evident in the concepts of education outlined by some of the major pragmatists. They not only stress focusing on the development of the whole child, but, more importantly, seek to incorporate experience as one of the prime means of insuring that growth.

Just as the child-centered approach views its educational purposes as being to insure the present development of the child without regard for measuring individual needs and interests primarily in terms of economic success, so the pragmatists consider that education should serve the present life by cultivating the whole organism. It should attempt, not only to meet the present needs of the learner and strive to cultivate individuality, but also to help the child to analyze and comprehend future life needs. In short, the child should be developed in terms of his ability to act and think, regardless of the situation in which he finds himself. He should be able to conceptualize and base his actions on conclusions that are inductively as well as deductively drawn.

Essentialism

Essentialism, a theory which follows many of the ideas held by the advocates of the adult-centered, traditional-type of curriculum, is the

philosophy that has been chosen to represent the opposing view to that of the Pragmatists, who as we have observed, propose a more experience-centered kind of education. In the first part of this work, we made mention of the fact that although the Progressive Education Movement brought with it many new and innovative ideas, there were those scholars, teachers, and educators who refused to change their current mode of doing things.

That group of scholars who adhered to the traditional and time-tested approaches to education and curriculum development can be classified as Essentialists, and it is their views that provided the basic philosophical theory for this movement which we shall examine in greater detail in the following paragraphs. It should be noted however, that Essentialism had been extremely influential in the practices of many schools during the first quarter of the twentieth century, but due to a lack of innovative ideas at a time when American education was in need of revitalization--adaptation to an increasingly complex, industrialized, and urbanized society--it had become overshadowed by more progressive ideologies. Nevertheless, as a cogent theory, it has continued to have notable resurgences in recent decades. For example, during the Depression, it was revived under the leadership of such men as William C. Bagley and Herman H. Horne who were instrumental in the organization of the Essentials Committee for the Advancement of Education in 1938. Essentialism was also given another thrust to the fore when it was advanced to counteract the undefined feelings of dissatisfaction regarding the quality and goals of American Public education in the disquieted period following World War II. This move resulted in the establishment of the Council for Basic Education.[35]

With the launching by the Russians of the first Sputnik in 1957, the need for reducing what appeared to be an obvious deficiency in American education sparked the outspoken support for the Essentialist philosophy by outstanding advocates such as Arthur Bestor, H. G. Rickover, and Jacque

Barzun. Even the then President of the United States, Dwight D. Eisenhower, voiced his concern for the need to revitalize the existing system of education when he said: "I should like to see a return to fundamentals in both high school and the higher grades of the elementary schools."[36]

Today, the dissatisfaction with the direction, the practices, and the results of contemporary American Education continues to be expressed. Frank E. Armbruster, in the article entitled, "Math Lesson: Money Won't Buy Brains," which appeared in the Wednesday, September 7, 1977 issue of the St. Louis Post Dispatch, comments on the appalling decrease in quality of education as can be evidenced by the rapidly falling rates of literacy and lack of competence in the basic areas of learning. He complains about those who would be iconoclastic in their views on education when he writes:

> . . . many teachers began to treat children as if they were little adults and had the experience and judgement of grown-ups; they yielded to them the responsibility of determining when, if and--within a disturbingly questionable range--even what they would study.
>
> The innovators tended to see the current problems as unique and invulnerable to any past approaches to solution. Many attacked everything from homework and rote learning to curriculums (sic) that included the standard academic disciplines. As in the late 1940's they again were out to "educate the whole child"--and alongside such an objective, teaching children to read, write and solve math problems could seem insignificant, as well as demanding, difficult and dull.[37]

He then, as a true essentialist, defends the methodology of those educators and teachers of twenty years ago when he calls for a return to the basics. In the second part of his article he writes:

> These teaching methods are often thought to be "old-fashioned," as perhaps is the idea that the classroom essentially must have an orderly,

well-structured, though by no means unhappy, environment.

Many "innovative" educators may object to these methods, but until other proved techniques are developed, they are the only tried and true ones we have, and, at least in the lower grades, most current teaching staffs have the general knowledge necessary to carry them out . . .

It is true that, in many ways, this means returning to a system we had about 20 years and three-quarters of a trillion tax dollars ago. This is certainly a bitter pill for us to swallow, but with the welfare of a generation of youngsters at stake, we may have no other choice.[38]

We should ask ourselves however, what are the basic principles, aims, and objectives of those who espouse the essentialist's concept of education. It can be generally said that the American Essentialist is primarily concerned with making the child competent in mind, body, and spirit through the cultivation of his intellect, the refinement of his taste, and the development of his moral character. They assert that the mastery of the "fundamentals" is imperative to the achievement of that quality of intellect, taste, and personality to which they allude. Consequently, Essentialists require that the school give priority to "solid learning" instead of acting as centers for civic development and charitable enterprise where focus is placed on the child's whims and fancies. In brief, they stress the need to turn to the teaching of what they consider the essentials, or in other words, the implementation of an adult-centered curriculum.

This leads us to inquire into the nature of these essentials. They can be considered as the basic virtues, ideals, habits, facts, and especially basic knowledge, skills (e.g., spelling, writing) and attitudes (e.g., industry, thrift) which have traditionally been thought of as the American, intellectual work ethic. The essentialists are fixed, constant, and relatively independent of time and place; they are recognized as indispensible to the common core of culture. These essentials are guides

both for the success of the individual and the security of the human race and the state. The essentialists believe that it is these fundamentals which can be identified and that they should be taught systematically and efficiently to all students regardless of their place in society or their intellectual potentials.

The criteria used in determining the specific elements to be included in the curricular experience of the learner is based on those which have been proven effective in the past. The essentialists contend that the tried and tested knowledge and skills of people of other times have great authority, and that it is these which should be trusted. As John Ciardi stated: "The first course in any science is essentially a history course. You begin by learning what the past has learned for you. Except as a man entered the past of the race he has no function in civilization."[39] According to the reasoning of Essentialists therefore, traditions must be valued, not only because they are old, but because they are true and good. It is for this reason that they have been frequently referred to as the "educational conservationists."

School and the transmission and preservation of the essentials. According to essentialist philosophy, the diverse institutions within the society exist for the purpose of accomplishing different ends: for example, the home, the church, and the adult community carry great responsibility for the moral education of the young. Hence, they should not pervert the purpose of the school by using it to propagate opinion in preference to verified knowledge. Essentialists hold that the school's primary task is to establish for the child an anchorage of reference in the accumulated truthful experiences of the race. They assert that it is imperative to equip man with the exact knowledge and skills which will enable him to compete with nature in the battle for survival, and this is only possible if the central and the dedicated function of schools--to transmit impartially and

objectively the accumulated verified knowledge--is properly carried out. The greater his comprehension of this knowledge, the more his power will be increased. In essence, the essentialists are saying, let the schools do what schools are supposed to do, i.e., the intellectual preparation of the child for adulthood and leave to other institutions those elements of the child's upbringing which, while important, are not really within the domain of the school.

In addition to the above, Essentialists see the transmission of knowledge and skill as an attempt to conserve rather than to reform the basic content and structure of the curriculum. They see the task of every school as helping the oncoming generation to acquire as much as possible of that cultural heritage which has withstood the test of time. To achieve this, it would be necessary for schools to eliminate the "non-essential, non-external elements" not valued in the past.

Conclusion

The essentialists have claimed that the Progressive Movement was misguided since it failed to provide the child with a secure linkage to a body of proven truth and historical tradition. They consider informal education supplementary, incidental, inefficient, and even at times unnecessary. They also regard "training" for specific jobs, especially jobs involving manual skills, as being outside the domain of the school. This is where such critics as James B. Conant and the pure essentialists tend to disagree, inasmuch as Conant espoused the concept of the comprehensive high school which would put intellectual and humanistic studies on par with practical preparation for trades. Moreover, Essentialists believe in learning the exact and logically organized content of a curriculum, as well as in high scholastic achievement measured by rigorous standards. They are in accord with the adult-centered curriculum when they advocate that future goals supercede present needs.

In other words, for the student to be able to reach future goals in life and work, a strenuous effort is perforce needed. While interested in the development of intellectual originality and creativity, they nevertheless assert that especially in preparatory stages, individualism or "felt needs" on the part of the child must be sacrificed for the sake of developing a thorough background in what they consider to be the essential cognitive aspects of traditional education.

In spite of the innovative trends that have influenced American education in recent decades, it can still be said that the essentialists' educational postulates, their ideas regarding the function of the school, and their concepts of reality, truth, and values, all have had deep impacts upon curriculum, methodology, and administration.

A consideration of the essentialists' view of the curriculum would therefore indicate that it must contain those elements which, according to the principles outlined above, the student should learn and needs to learn. Deference should not be given to what they would like to learn. In other words, the Essentialist sees the curriculum, not as a collection of courses previously assembled, but rather as a logical sequence of solid subjects of studies. Every course however, must consist of the essentials which must be taught, even though their significance is not evident in the fulfillment of some immediate need. If the essentials learned are not useful in the present, they will be stored until the appropriate occasion arises for their usage.

The scope of this study does not allow for the treatment of philosophical concepts beyond the major ones already elaborated upon. Furthermore it seems unnecessary to attempt such an elaboration since a large number of those that would be treated can, in essence, be considered as extensions and/or variants of the ones previously expounded on. If we then take a synoptic view of the remaining philosophies, for example,

Perenialism, Reconstructionism, Idealism, and Realism, it will be discovered that they are readily classifiable according to the dualistic criteria which we have developed earlier--at least as far as the educational implications are concerned. The facility of classification can be exemplified if we refer to the chart taken from Table 2-1 of Tanner and Tanner's book, Curriculum Development Theory and Practice.[40] This chart, as shown below, can be viewed as summarizing the main features of six philosophies of education and its subsequent usage in the development of educational curricula. If we add two new columns--basic philosophy, and our classification--to this chart, we can demonstrate that the philosophies there represented can be construed as variants of the ones we have discussed and as a result can be classified under one of our two categories, adult or child-centered. This goes hand in hand with the statement advanced by Monroe in his Philosophy of Education that:

> While different philosophies of education will still exist they will not be so many corollaries of divergent pure philosophies, but will make explicit the different conceptions of the value and aims of actual life held by different persons. It will be seen that different philosophies exist because men have in mind different ideals in life and different educational methods for making these ideals prevail.[41]

Now that we have completed the presentation of a dual concept of an approach to curriculum construction, along with two philosophies which, in their educational ramifications, can be thought of as being representative of that dual concept, we shall now turn our attention to the specific area of music education. We shall provide a brief examination of its historical development in terms of the kinds of philosophical approaches that have influenced the shape of its curriculum. It is important to point out that the philosophies of music education have been influenced in large measure,

Philosophy	*Controlling Aim*	*Curriculum*	*Method*	*Ideal of Learner*
Perennialism (Essentialism)* Adult	Cultivation of the rational powers; academic excellence.	Liberal arts, Great Books.	Mental discipline; literary analysis.	Rational being guided by first principles; mind elevated above biological universe.
Experimentalism (Pragmatism)* Child	Reflective thinking for social problem solving; democratic citizenship; growth.	Comprehensive, unified, problem-focused studies, in democratic classroom setting.	Social problem solving through reflective thinking and democartic processes.	Autonomously thinking socially responsible democratic citizen; organism in biological continuity with nature.
Reconstructionism (Essentialism)* Adult	Building an ideal democratic social order (a practical Utopia).	Social problems, corrective programs scientifically determined for collective action.	Critical analysis of social flaws and programmatic needs for corrective action.	Rebel committed to and involved in constructive social redirection and renewal.
Romantic Naturalism (Pragmatism)* Child	Individual freedom to develop one's potentials	Learning activities based upon child's felt needs.	Laissez faire; free learning environment for artistic self-expression.	Unfolding flower
Existentialism (Pragmatism)* Child	Inner search for meaning of one's own existence.	Themes on the human condition; learning activities, free of rational constraints, designed to free the individual to find his own being.	Introspection (examining one's own feelings, impulses, thoughts) in a free learning environment.	Flower in search of meaning of its own existence

*The classification according to the two basic philosophies that we have used (essentialism and [illegible]) and the categorization according to the two rationales (child vs. adult) developed

not only by the various philosophical attitudes held in the particular society at large at a specific time, but also by the social, cultural, and economic factors foreign to the nature of music itself. The result is that there is a close link between the general philosophies and those of music education. These factors are important in viewing the development of this area which we shall proceed to give, restricting it to a consideration of this phenomenon in the United States since the middle of the nineteenth century.

History of American Music Education

When music was first officially introduced as a part of the Boston Public elementary school program in 1838 by Lowell Mason, mental, moral, and physical discipline were the aims of the course of study. It can be said that these objectives were based on an adult-centered rationale, since the factors that were stressed had the functional aim of ameliorating the general state of musical illiteracy that obtained at that period. Emphasis was placed on music reading with the sacred and secular forms used reflecting those compositions and composers that were held to be of lasting cultural value. This continued during the latter years of the nineteenth century but soon met with the opposition of several music educators who contended that since music was designed to be heard, reading was an unnecessary as well as artificial aid to the common student of this art form.

During the last decade of the nineteenth century, the pedagogy of Herbart (a German educator), which involved the child-study movement, began to exert distinct and complimentary influences on American music education. Accompanied by an interest in perfecting teaching techniques, there was a concomitant concern for developing high mental acceptance spiritually rather than methodologically. This was in essence, the beginnings of a

shift towards a child-centered approach to music education, in which the choice of subject matter became the direct outcome of the child's interests. The Progressive movement implied by these beginnings was crystallized in the Pragmatists and hence, child-oriented philosophies of James, Kilpatrick, and Dewey, which reflected new concerns for social efficacy and established a framework in which natural means of pupil activity and expression would evolve. Such an approach was the result of the democratic concept of education and life which held that every child should have the opportunity for social, constructive, expressional, and creative development. Rather than stress receptivity or the absorption of chosen data, emphasis was placed on activity in the learning process. As Leonhard and House succinctly state regarding this new development, its proponents held that:

> . . . education cannot be a process of factual assimilation, but of investigation and activity developing from the felt needs of the child.[42]

The pragmatists' approach was further strengthened by the Progressive education movement which had its greatest impact between 1918 and 1938, with a model which reflected a concern for the child rather than the subject. Thus, Progressivism in music education can be seen to have based much of its innovation on psychological evidence regarding motivation, learning, and individual differences and capacities. The child was no longer measured only from an adult perspective--in terms of what he might be and do as a contributing member of a democratic society, but also from the purely child-oriented perspective in terms of his maximum ability for total musical development.

Since the second half of this century, public school curricula began to undergo a period of reform and a corollary of this was that music educators were faced with the task of having to justify the inclusion of their specialty in the curriculum. As early as 1930, James Mursell had already provided

"modern" music educators with some rationales for validating the inclusion of a program in music education. As Carroll Gonzo points out, he established four principles to justify his position as a tenable one. He held:

> First, that the music program is an organized opportunity for aesthetic experience; second, that it is an organized opportunity for social experience; third, that the development of technical mastery has a necessary place in music education; and fourth, that the acquisition of knowledge about music has a proper place in music education.[43]

The principles that characterize Mursell's philosophy have contributed much to the development of contemporary approaches to music curricula, many of which can be thought of as being "Gestalt" and consequently child-oriented in their perspective on the construction of music education curricula. Examples of the types of music curricula which have subsequently employed this Gestalt approach are the Contemporary Music Educational Program, its subsequent outgrowth--the Hawaii Music Program, and the Manhattanville Music Program, which are all child-oriented and thus represent the most contemporary, innovative applications of philosophical perspectives to curriculum construction.[44]

This brief evaluation of the historical development of music in the United States has tended to indicate an initial period of adult-centered orientations followed by the inception and development of a child-centered approach that came about with the rise of the Progressivists during the second decade of the present century. Subsequent to this however, the traditional-adult-centered approach manifested in philosophies like essentialism and reconstructionism, have provided reactions against some interpretations of the Progressive movement. This tendency towards a traditional stabilization of an approach to curriculum development was in turn reacted against by further innovative child-centered approaches.

Some General Guidelines and Principles

If we were to attempt to propose guidelines for the development of a music curriculum which takes into account both the theoretical and historical postulations made thus far, our purposes would best be served by the adoption of an eclectic approach. Such an approach would attempt to distill from each of the philosophical orientations outlined via the two categories established, those characteristics that would best foster the development of both an awareness of the importance of music as well as the ability to appreciate and conceptualize about diverse trends and expressions of this art form.

Although the element of conformity to a society is an important feature necessary to functioning in that society, this writer believes that when viewing the purpose of education and hence, of curriculum development, the evolution of a well-rounded individual should take precedence over the foregoing idea. If the emphasis is placed on developing the whole individual, and within that individual, the ability to conceptualize logically, then the ability to adapt with a minimum of difficulty should follow almost naturally. Of course, when we make reference to the idea of conformity, we are immediately led to think in terms of the adult-centered view which adopts as its major approach the imparting of those skills and tools with which the child should be equipped if he is to become a successful participant in the given society of which he is a member. However, we prefer not to think of such skills and tools as being representative of pre-established forms which the learner is expected to assimilate. Rather we would prefer that the child be given those skills and tools that he could presently as well as subsequently use in any experiences that he may encounter. In short, our primary aim is that he should develop that ability to conceptualize.

This ability to conceptualize does not eschew necessary the acquaintance on the part of the learner

with materials that have come to be considered, according to a traditional viewpoint, pertinent to the insuring of cultural continuity both in terms of acquisition of knowledge and shaping of personality. Rather, such materials will be presented as a part of a total experience and will thus acquire a degree of realitivity that allows for personal interpretation and judgement in relation to other aspects of that experience. In this way, the tendency towards conceptualization as well as the development of critical ability will be fostered and should result in a more rounded individual whose appreciation of the particular study, music in our case, will be sharpened.

With regard to those subjects which are considered basic components of the general education curriculum, the emphasis placed by the adult-centered proponents on the communication of "organized knowledge" have always tended to exclude those areas that involve vocational training and de-emphasize the fine arts. We believe however, that a greater degree of balance should be introduced, not only by placing more emphasis on these latter areas, but also by stressing the aforementioned ability to conceptualize, which would make for the manipulation of such verified knowledge to the best advantage of the learner. This procedure would equip the student to meet successfully his present needs, as well as provide him with the capacity to derive an appreciation of the past needs of the society and formulate his <u>own</u> conception of his future needs.

The considerations that we have postulated above represent an eclectic rendering of ideas derived from the exposition of the philosophies treated in the two categories we have developed in that they are based on a concept of the child which can be outlined as follows. He must be thought of as being at one and the same time an individual in his own right needing to develop and express his own personality, as well as a future adult-functioning member of the society to which he belongs. This requires that a sense

of balance be introduced into both the planning and the execution of any curriculum that will affect his education in such a way that he is insured success in meeting the demands of his environment.

The application of these general principles to the specific area of the construction of music educational curricula would tend to develop and stress the following factors. First of all, we would consider it necessary that such a program should be directed towards creating in the child, not only an awareness of the historical data associated with the evolution of music in the form of organized facts, but also the ability to conceptualize, be creative, and hence, arrive at valid conclusions regarding different manifestations of this form of expression. In other words, these several aspects of music need to be presented with equal emphasis if the child is to develop any degree of aesthetic sensitivity towards the art of music. Secondly, such ability would of necessity involve the communication to the student of certain tools and skills related to this area of study. The inculcation of these however, should be approached from what could be termed a "Gestalt" perspective, since a curriculum planned from this point of view would take into consideration the total musical development of the child.

The implications of the development of the dual concept of education and the approach to the construction and execution of a curriculum based on a "Gestalt" perspective will be evident in the new facility that should be afforded the administrator and music educator in the planning of that curriculum. The streamlining of the various philosophical approaches to education and their summation in terms of the two rationales established will allow those concerned to develop a clearer perspective of the role of music education within the general curriculum, approach the planning of the music program with a keener focus, and formulate strategies for its implementation that will insure a continued interest in this area of

education on the part of the student far beyond the halls of learning of any educational institution. It is to these ends that this study has been directed.

Footnotes

1. We suggest to the reader a comparison of the Julliard Repertory Series, edited by Claude Paliska and the Manhattanville Music Curriculum written by Ronald B. Thomas.

2. We refer to such authors as Tanner and Tanner, Eisner and Vallance, Virgil E. Herrick, Adrian Dupuis, B. O. Smith, and Doll--all writers in the field of educational curriculum.

3. There are of course many exceptions to this statement. There are still in existence various schools which choose to adhere to the more conservative oriented ideas and curriculum.

4. G. Robert Koopman, Curriculum Development (New York: The Center for Applied Research in Education, Inc., 1966), p. 2.

5. Lawrence A. Cremin, The Transformation and the School (New York: Alfred A. Knopf, Inc., 1961), p. viii.

6. Robert J. Shaeffer, "The Curriculum Retrospect and Prospect," in Curriculum Retrospect and Prospect, Robert M. McClure, ed. (Chicago: National Society for the Study of Education, The University of Chicago Press, 1971), p. 4.

7. Herman Harrell Horne, The Democratic Philosophy of Education (New York: The Macmillan Co., 1932), p. 32.

8. These so called "greatest ideas and objects that man has created" refer to a distillation of those virtues of the "permanent subjects" which have been embodies in the "Great Books" of the Western World. Robert M. Hutchins expounds on this idea in his The Higher Learning in America (New Haven: Yale University Press, 1936), p. 66.

9. William T. Harris (1835-1909) Superintendent of St. Louis Public Schools and the United States Commissioner of Education.

10. The conservative conception of truth is derived from the Platonic and Aristotelian conceptions of the nature of knowing. Both these systems of thought emphasized the primacy of intellect (or reason) in the process of arriving at either a code of ethics or a criteria for art.

11. The Latin phrase is translated into English as "A sound mind and a sound body."

12. Adrian M. Dupuis, Philosophy of Education in Historical Perspective (Chicago: Rand McNally and Company, 1966), p. 9.

13. Ibid., p. 13.

14. Herman H. Horne, This New Education (New York: Abingdon Press, 1931), p. 82.

15. William H. Kilpatrick, Foundations of Method (New York: Macmillan and Company), p. 32.

16. Jean Jacques Rousseau, Emile (London: J. M. Dent and Sons, Ltd., 1911), p. 5.

17. Lowell Keith, Contemporary Curriculum in the Elementary School (New York: Harper and Row Publishers, 1968), p. 29.

18. A famous Swiss educator who applied Rousseau's ideas of naturalism to a more structured concept of experimentation.

19. The Progressive movement was marked by a group of educators who attempted to use the methods of science to modify the elementary school curriculum lasting from (1876-1957 approximately). The movement began as a protest against the overemphasis of symbols and "book learning" in the curriculum and against the standardization of the curriculum.

20. Keith, Contemporary Curriculum, p. 33.

21. Foster McMurray, "Pragmatism in Music Education," in Basic Concepts in Music Education, Nelson B. Henry, ed. (Chicago, Illinois: The National Society for the Study of Education, 1958), p. 33.

22. William James, Talks to Teachers on Psychology (New York: Henry, Holt and Company, 1939), p. 29.

23. John Dewey, Democracy and Education (New York: The MacMillan Company, 1932), pp. 89-90.

24. Don-Chen Chu, Philosophic Foundations of American Education (Dubuque, Iowa: Kendall/Hunt Publishing Company, n.d.

25. John Dewey, "My Pedagogic Creed," Journal of the National Education Association (December 1929), p. 13.

26. William H. Kilpatrick, "Philosophy of Education from the Experimentalist Outlook," The Forty-first Yearbook of the National Society for the Study of Education, Nelson B. Henry, ed. (Chicago: University of Chicago Press, 1942), p. 76.

27. Ibid., p. 77.

28. Ibid.

29. John Dewey, The Child and the Curriculum, Philip Phenix, ed. (Chicago: The University of Chicago Press, 1956), p. 16.

30. John Dewey, Democracy and Education (New York: The MacMillan Company, 1916), p. 226.

31. Dewey, The Child, "My Pedagogic Creed."

32. Kenneth H. Hansen, Philosophy of American Education (New Jersey: Prentice Hall, 1960), p. 28.

33. Foster McMurray, "The Present Status of Pragmatism in Education," School and Society 87 (January 17, 1959), p. 14.

34. John Dewey, Experience and Education (New York: The MacMillan Co., 1938), p. 5.

35. In response to the concerns expressed by the various critics, who were opposed to the Progressive ideologies that were dominating the educational scene during the early and middle part of the 20th century, the Council on Basic Education was established in 1956 in Washington, D.C.

36. Benjamin Fine, The Modern Family Guide to Education (Toronto: Doubleday, 1962), p. 221.

37. Frank E. Armbruster, "Math Lesson: Money Won't Buy Brains," St. Louis Post Dispatch, September 7, 1977, p. 3D.

38. Ibid., September 8, 1977, p. 3D.

39. John Ciardi, Rutgers Alumni Monthly 34(2) (November 1954), p. 2.

40. Daniel Tanner and Laurel Tanner, Curriculum Development--Theory Into Practice (New York: MacMillan Publishing Company, 1975), pp. 66-67.

41. Paul Monroe, "Philosophy of Education," Encyclopedia of Educational Research (New York: MacMillan Co., n.d.), p. 697.

42. Charles Leonhard and Robert W. House, Foundations and Principles of Music Education (New York: McGraw-Hill Book Company, Inc., 1959), p. 55.

43. Carol Gonzo, "An Aesthetic Experience," Music Educators Journal (December 1971), p. 36.

44. For a detailed treatment of the Gestalt Approach to education and its application in the programs referred to see my article: Rene Boyer, "The Influence of Gestalt Psychology on Elementary Music Education and Pedagogy--Proposals for a Curriculum (k-6)," in the Missouri Journal of Research in Music Education 3(5) (1976), pp. 6-46.

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ABSTRACT

HARRY S. TRUMAN AND HIS PRESIDENTIAL ADMINISTRATION AS AN INFLUENCE ON MUSIC IN THE UNITED STATES 1945-1952

Cynthia M. Atwell, D.M.A.
University of Missouri-Kansas City, 1979

There has been renewed interest in Harry S. Truman and his Presidency during the 1970's, and the world has come to admire his decisive leadership and straightforward manner. Truman's personal life as well as his public life contained these same qualities.

Truman always considered music to be a very important avocation; in his opinion, musical study helped to build character and understand other people. By examining music's part in Truman's private as well as his public life, one can decide whether a Chief Executive's interest in a field such as music effects that industry in the United States during the years of his presidency.

Truman's early years were filled with books and music largely because of his mother's influence. Later, piano lessons and concert attendance molded Truman's love for music and his musical preferences.

While in the White House, Truman had a personal influence on music. He was an enthusiastic supporter of Inter-American Music Week and of American Music in general. He aided diplomacy with his piano performance at Potsdam, July, 1945. He was a loyal supporter of his daughter, Mary Margaret Truman and her career as a singer. Both Truman and his family attended concerts and personally chose the musicians who appeared during the only formal social season while Truman was President, 1946-47.

As Chief Executive of the laws of the United States, Truman did not initiate, but did sign laws that affected many phases of the music industry.

The long-playing 33 1/3 r.p.m. record and the 45 r.p.m. record came into existence during Truman's term of office and so did attempts by James C. Petrillo and the American Federation of Musicians to control the recording and television industries. The Lea Act was passed by Congress to police the musicians' union. Expanding music industries also provided problems for the American Society of Composers, Authors and Publishers and Broadcast Music, Inc., organizations that controlled licensing for radio and television stations and royalties for composers. The manufacturers of pianos and other musical instruments tried to free themselves from the bonds of wartime limitations on raw materials and an excessive excise tax on musical instruments. In addition, repeated attempts were made to pass legislation which would subsidize music, especially in Washington, D.C.

Truman's early musical training and subsequent interests were largely limited to the classical literature. Some research was done concerning popular music of the Truman era, but since a strong relationship could not be established, that material was excluded from the thesis.

ABSTRACT

RECOGNITION OF CHEST, HEAD, AND FALSETTO REGISTERS OF ISOPARAMETRIC TONES OF TENOR VOICES

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The purpose of this study was to examine and compare listener-judges regarding their ability to identify Chest, Head, and Falsetto registers of isoparametric tones of tenor voices. Isoparametric tones are tones of the same fundamental frequency, sound pressure level, and phonemic category sung in different vocal registers. The data from the perceptual judgments of the listener-judges were analyzed to determine listener-judge accuracy in

identifying Chest, Head, and Falsetto register isoparametric tones. The data were analyzed to determine whether the sex of the listener-judge or the university where he taught had an effect on the listener-judges regarding their ability to identify vocal registers and to determine whether the listener-judges based their judgments on comparison of registers of a given singer or judged the Chest, Head, and Falsetto register tones against a fixed standard.

It was also of interest to determine whether differences in perception were related to differences in the acoustic spectra of Chest, Head, and Falsetto register tones. In addition, the possibility of the tenors having modified the vowel in order to isolate registers was explored.

Each of four tenors was recorded individually in a sound treated booth while singing Chest, Head, and Falsetto register tones at the same fundamental frequency (350Hz) and sound pressure level. Each tenor was instructed to sing the vowel /a/ "ah" for approximately four seconds in each register. From each original Chest, Head, and Falsetto register tone a center portion of 2.5 seconds duration was spliced out (as an attempt to remove any cues that might be present in the onset and/or termination of a tone). The twelve tones, 2.5 seconds in duration, were copied so they could be presented in groups of three tones sung by the same tenor, but in which the order of presentation of or the number of registers could be varied. The final listening tape consisted of fifty items ("item" was defined as a group of three tones).

Seventeen listener-judges who were singing teachers on the faculties of six large Midwestern universities performed the judging task. Listener-judges after hearing each member of an item, consisting of three tones, were to label the order of presentation.

Acoustical analysis of the twelve tones was conducted with the use of a sonograph. Information

from the sonograph frequency-versus-amplitude displays was converted to bar graphs as a means of comparing each tenor's Chest, Head, and Falsetto register tones. In addition, the possibility of the tenors having modified the vowel was explored by having a separate group of ten judges listen to the twelve tones and identify the vowel they had heard.

The interpretation of the results of this research study permits the following conclusions:

1. Register identification by singing teacher listener-judges agrees with the intentions of the tenor singers producing isoparametric tones in Chest, Head, and Falsetto registers
2. Although there was no statistically significant difference between the overall accuracy of groups of male and female listener-judges, male and female listener-judges appear to be able to identify most accurately the register which they use most often
3. Singing teachers grouped by university appear to possess varying abilities in identifying Chest, Head, and Falsetto register isoparamatric tones
4. The listener-judges appear to use comparison of registers of a tenor as a means of identifying registers
5. The position (Member A, B, or C) in the item of a register does not appear to effect the ability of listener-judges to identify registers
6. Perceived register timbre differences appear to be related, at least in part, to different distributions of energy in the acoustic spectra of Chest, Head, and Falsetto register isoparametric tones
7. Certain tenor singers appear to be unable to sing Chest, Head, and Falsetto register isoparametric tones without some modification of vowel

ABSTRACT

JACQUES HOTTETERRE'S L'ART PRELUNDER /FOR WIND INSTRUMENTS/ A TRANSLATION AND COMMENTARY

Margareth Anne Boyer, M.M.
University of Missouri-Kansas City, 1979

Jacques Hotteterre (c. 1680-1761) is probably best known today for his Principes de la Flute Traversiere, ou Flute d'Allemagne, De la Flute a Bec, ou Flute Douce, et du Haut-bois (Paris, 1707), but he was also the author of a Methode pour le musette (Paris, 1734) and of L'Art de Preluder Sur la Flute Traversiere, Sur la Flute-a-Bec, Sur le Haubois, et autres Instrumens de Dessus, Avec des Preludes tous fait sur tous les Tons dans differ.s mouvem.s et differens caracteres, accompagnes de leurs agrem.s et de plus.rs difficultees propres a exercer et a fortifier. Ensemble des Principes de modulation et de transposition; En outre une Dissertation instructive sur toutes les differentes expeces de Mesures, &c. (Paris, 1719), the subject of the present work.

This thesis presents a translation of the L'Art de Preluder together with an introduction discussing preludes for wind instruments in the early eighteenth century, and commentary in the form of footnotes to the text. Of particular interest are nearly 70 examples from the works of major composers which Hotteterre used to illustrate his discussion of meter, tempo, and rhythmic alteration and which have been identified by the translator.

The translation includes a transcription of the preludes and traits given by Hotteterre in his book. Other preludes by Hotteterre (from his Methode pour la musette) are given as an appendix. A photocopy of the entire L'Art de Preluder is also given to facilitate study.

ABSTRACT

A CONDUCTOR'S ANALYSIS OF AND PREPARATION AND APPROACH TO POLYRHYTHMS: WITH PARTICULAR ATTENTION TO POLYRHYTHMS IN CERTAIN OF THE CHORAL WORKS OF CHARLES E. IVES

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This study was prompted to a large degree by the lack of performances of several works by Charles Ives. It was determined that even though several of these works were highly praised by writers, actual presentations were few due to the performance difficulties presented.

The main purpose of this study was to examine one of the most formidable of these difficulties, that of polyrhythmic activity, and ascertain how this particular problem could be overcome.

An attempt was made to place the music of Ives in perspective generally with particular attention paid to the Three Harvest Home Chorales. This work chosen because of the high degree of polyrhythmic activity in the second of the three Chorales, where on several occasions there exists the rhythmic ratios of 9:8:6.

Several possibilities for the solution of the conductorial problems were presented and it was determined for the purposes of this study to concentrate on multiple time beating. In the case of the 9:8:6 ratio, if the conductor beat four in one hand and three in the other, the performers who had the six element could watch the three pattern and the performers with the eight element would watch the four pattern. The nine element could then be negotiated by watching the three pattern and thinking three beats for every two presented.

A set of exercises was developed using the Billotti Trinome, an instrument capable of producing three tempi simultaneously. Through personal experimentation and work with several control

groups it was determined that, using this instrument and several other drills presented, most students could learn to beat these multiple tempi in a relatively short time. It was found however, that prolonged practice was necessary before this task could be performed with the facility needed to free the intellect to concentrate on other musical elements.

The practical application of the theory was tested in two situations; the first in a one hour rehearsal with the UMKC Conservatory Chorale and the second in prolonged rehearsal with the Schola Cantorum of the University of Arkansas.

The results of both of these rehearsal periods were successful, culminating in a performance of the Three Harvest Home Chorales with the Schola Cantorum, brass and organ on November 21, 1977. The rehearsal time spent on the second Chorale was approximately ten hours.

The most important contribution of this study has been to develop procedures, by which the time needed in rehearsal to prepare a work such as the Three Harvest Home Chorales can be reduced appreciably. The time required for the conductor's preparation is considerable. This time is justified, however, if a work of this nature can be prepared for performance with ten hours rehearsal.

ABSTRACT

A CONCERTO IN G MAJOR FOR SOLO TRANSVERSE FLUTE, TWO VIOLINS, VIOLA, AND BASS BY LEONARDO LEO: AN EDITION

Judith Johnson Herndon, D.M.A.
University of Missouri-Kansas City, 1978

The eighteenth-century Neapolitan composer, Leonardo Leo (1694-1744), was known primarily for his comic operas and his choral compositions for the church. In no comprehensive list of his work

is there any mention of concertos for solo transverse flute and strings. However, manuscript number SM 3705, housed at the Oesterreichische National-bibliotheck in Vienna, Austria, does contain two such concertos. On the title page of each concerto is written the phrase "Del Sig: Leonardo Leo." Whether or not these concertos are actually by Leo or are only attributed to him by some copyist has not been determined. But in order to bring at least one of these works to light and to make it available for performance, an edition of it has been prepared as the second valume of this dissertation.

The concerto in question is for five instruments: "Flutraversiere *[sic]* Concerto, Violino Primo, Violino 2do, Alto Viola, Col Basso." The manuscript includes only parts; no score of this work has yet been found. All parts appear to be the work of one copyist, and in some respects they seem to have been prepared in anticipation of performance. However, there are not only many instances in which the manuscript is difficult to read, but there are also confusing and misleading notations. The present edition has been made in score form to allow for expedient study of the work, and it represents an attempt to clarify some of the discrepancies found in the parts.

The Introduction to the first volume of the dissertation contains a physical description of the manuscript. Chapter one is a brief outline of Leo's biography, presented with emphasis on the confusion about the facts of his life which existed for many years among his several biographers. Chapter two is an analysis of the Concerto. Chapter three is an explanation of the many editorial problems encountered in making the score and of the procedures involved in attempting to solve those problems.

Leo's Concerto is somewhat uncharacteristic of its time in that it contains four movements rather than three. In most other respects, however, it appears to be typical of the early eighteenth-century solo concerto idiom. It

features the solo flute in a range to which it is well suited and displays its technical capabilities with a considerable amount of virtuoso-style figuration and passage work. The soloist plays with the strings during most of the tutti sections. The string parts provide a basically homophonic accompaniment for the soloist.

The Concerto adds to the repertoire of the early eighteenth-century solo flute concerto, a repretoire which is enjoying a period of rediscovery by performers and audiences alike.

ABSTRACT

CONCEPT TASKS YOUNG CHILDREN CAN MASTER

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The music concepts an individual has stored enable him to hear music and make musical decisions that are the basis of musical perception. How early can acquisition of those concepts begin? What kinds of tasks can young children master? This study compared the achievement of four-year-olds on twenty-two musical concept tasks when AVII model instruction was used for teaching. Four-year-olds in seven day care centers served as subjects in the investigation. Two to four musical concept tasks were taught in each center by ten music-teachers-in-training, one graduate assistant, and one experienced lay teacher. Data gathering was carried out between October 1978 and October 1979. Subjects achieved mean posttest scores of six to nine correct responses out of a possible twelve on posttests for all tasks except that of half-step interval recognition. Children taught by the experienced teacher had a significantly higher posttest score mean than children taught by the graduate assistant on the first task these two groups undertook. There was no significant

difference between means of these two groups on the next task assigned to them, showing that experience with AVII concept teaching is still an effect. No significant difference was found for experienced teacher and teacher-trainees on any task. The teacher-trainees had had experienced with the model teaching in their methods class. No significant difference was found for bassoon timbre identification for children instructed by four different teacher-trainees. Significant differences were found between posttest and retention test means on three of seven tasks, with two of those retention means higher than for the comparable posttest.

ABSTRACT

A PHOTOGRAPHIC, AIR FLOW DIRECTION, AND SOUND SPECTRA ANALYSIS OF TWO TRUMPET EMBOUCHURE TECHNIQUES

Walter Jerry Myers, D.M.A.
University of Missouri-Kansas City, 1979

The purpose of this study was to compare photographically upper and lower lip inversion of two contrasting trumpet embouchure techniques, to determine and compare air flow direction as influenced by these embouchure techniques, and to compare graphically the strength of partial tones within the tonal spectra of selected frequencies and intensities as generated by each embouchure system.

Two basic embouchure systems appear to have pervaded trumpet performance. One embouchure encouraged more horizontal air flow direction and was characterized and apparently influenced by less upper lip inversion and more upper lip overlap. The other embouchure encouraged downward air flow direction as influenced by less upper lip inversion and more upper lip overlap.

Four male trumpet performers, two of whom were adept with the first mentioned embouchure system

and two with the second system, were selected as part of a quasicontrolled system. To this closed system the subjects were asked to add an extraneous embouchure technique or independent variable by permitting the upper lip to slightly overlap the bottom lip while performing the desired tones (written C4, C5, and C6). The experimental embouchure provided a vehicle for testing altered lip relationships.

The data needed for solving the first subproblem were six close-up photographs of each subject's embouchure (both control and experimental) while buzzing the desired three test tones on an instrument mounted mouthpeice visualizer. Each subject was compared to himself for identifying individual lip inversion changes.

Next, measurements were gathered of air flow direction produced by each embouchure setting while buzzing the desired frequencies on a trumpet mounted mouthpiece visualizer. A brass plate was mounted on the mouthpiece visualizer in a position to split through the plane of symmetry. A small drop of blue water color was placed at the source of lip vibration. A resultant flow pattern provided an angle measurement above or below the horizontal axis of the trumpet.

The data needed for solving the third subproblem were (a) a tape recording of the subjects performing the sample tones, (b) a harmonic analysis of the recorded tones, and (c) a graph conversion of the harmonic analysis.

A Bruel and Kjaer microphone was mounted on a parallel axis to the bell of the test trumpet. The output of the B&K microphone was fed to a B&K sound level calibrator. The output from the sound level meter was transmitted to a Beckman frequency counter and simultaneously recorded.

Tape loops were made of the recorded trumpet tones, and were fed into a B&K frequency analyzer. The output of the frequency analyzer was delivered to a B&K graphic level recorder. The harmonic

analysis was displayed on strip chart paper which was converted to line graphs.

The major conclusions which have been advanced from this study may be summarized as follows:

1. Measurements obtained via photographic data of trumpet embouchure settings can be related to the amount of upper and lower lip inversion utilized at selected frequencies and intensities.

2. Trumpet performers tend to experience changes in upper and lower lip relationships when negotiating register changes within a normal tessitura.

3. Increased upper lip inversion, more lower lip involvement, and a greater upward air flow direction can assist in producing low register trumpet tones.

4. Stronger relative pressure amplitudes of the constituent partials of trumpet sound spectra tend to be encouraged with the use of less upper lip overlap.

5. Trumpet embouchure techniques which utilize less upper lip inversion (more upper lip overlap) encourage lip movement during register changes.

6. Air flow direction may be influenced by the amount of upper and lower lip inversion employed when trumpet performers buzz selected frequencies and intensities.

7. Within accepted limitations, trumpet embouchure technique involving upper and lower lip relationships may be isolated and acoustically analyzed.

8. Both lips, not just the upper lip, can be significant vibratory membranes in the activity of trumpet tone production.

9. Trumpet embouchures using less upper lip overlap produced generally more even and smoother spectra than those embouchures using more upper lip overlap.

10. In general, trumpet performers who use more lip inversion, and who employ more horizontal air flow direction tend to produce partial tones of greater strength within the tonal spectra of selected frequencies and intensities.

ABSTRACT

A COMPARISON OF THE TONAL MEMORY SKILLS AND RHYTHMIC MEMORY SKILLS OF SECOND-GRADE CHILDREN

Patricia Harvey Powell, M.M.Ed.
University of Missouri-Kansas City, 1979

The problem in this study was to compare the tonal memory skills and rhythmic memory skills of second-grade children when singing accuracy, reading level, sex, and age were controlled factors.

The 40 subjects for this quasi-experimental study were selected from the 141 second-grade children enrolled in the Buckner Elementary School, Buckner, Missouri, during the school year, 1978-79.

The identification of accurate and inaccurate singers was based on the ability of each child to sing the song selected for the Vocal Accuracy Test (VAT). An accurate singer was judged as one who matched the beginning pitch and sang the remaining pitches with a degree of accuracy consistent with classroom performance standards as evaluated by the investigator. An inaccurate singer was judged as one who failed to match the beginning pitch and/or failed to sing the remaining pitches with a degree of accuracy consistent with classroom performance standards as evaluated by the investigator. Forty subjects, 20 accurate singers and 20 inaccurate singers, were selected for further testing.

The Tonal Memory Test (TMT) consisted of 24 paired melodic items performed on a piano which were identified as "same" or "different." Melodic patterns based on major, minor, and pentatonic

tonalities and containing steps, skips, and repeated tones were constructed for these items.

The Rhythmic Memory Test (RMT) consisted of 24 paired rhythmic items identified as "same" or "different" and performed on a woodblock. Rhythmic patterns and time signatures were used which were representative of second-grade song material.

The data were recorded on a tally sheet and transferred to data cards for data processing. Data analysis was accomplished through use of programs from the Statistical Package for the Social Sciences (SPSS). Data were treated according to frequencies, one-way analysis of variance, cross-tabulation, multiple regression, t-test, and Kuder-Richardson formula 20. The level of rejection of a hypothesis was $p < .05$.

In this study tonal memory skills and rhythmic memory skills of 40 second-graders were compared when singing accuracy level, reading level, sex, and age were varied. The following conclusions were reached: (1) Tonal memory and singing accuracy were significantly related. (2) Tonal memory and reading level were significantly related. (3) Rhythmic memory and sex were significantly related. (4) There was a significant relationship between singing accuracy and sex. (5) There was no significant relationship between tonal memory and sex or age. (6) There was no significant relationship between rhythmic memory and singing accuracy, reading level, or age.

ABSTRACT

THE PHI FACTOR: MATHEMATICAL PROPORTIONS IN MUSICAL FORMS

James A. Rothwell, D.M.A.
University of Missouri-Kansas City, 1977

This study documents the presence of the golden ratio as a structural element in the forms of selected

works from five musical periods--Renaissance to Twentieth-century. Detailed historical accounts of the golden ratio and Fibonacci series, and a mathematical derivation of the golden ratio and its common approximations are included as background material. An overview is presented of previous analytical work on the subject.

A method of proportional analysis is suggested, based on observed roles of mathematics in music. Ten premises are stated which categorize those observed roles and allow for other possibilities of structural organization. Two computational aids--an analytical program and a table of historically significant numbers--are included. Suggestions are given for the application of proportional analysis to matters of tempo and time-structure interpretation.

Examples of proportional analysis include the following works:

Bach, J. S.: Contrapunctus 2, S. 1080. Inventio 3, S. 774. Inventio 8, S. 779. Inventio 10, S. 781. Kleines harmonisches Labyrinth, S. 591. Wachet auf: ruft uns die Stimme, S. 645.

Barber, Samuel: Sonata for Piano.

Bartok, Bela: Sixth Quartet.

Binchois, Gilles: De plus en plus.

Brahms, Johannes: Acht Klavierstuecke, op. 76 no. 1. Balladen fuer Pianoforte, op. 10 no. 3. Waltzer fuer Pianoforte, op. 39 nos. 5, 6, 11, 12, 15.

Chopin, Fryderyk: Prelude, op. 28 no. 9.

Gibbons, Orlando: Fantasia.

Handel, George Frederic: Hallelujah chorus, Messiah.

Haydn, Joseph: Symphony 97.

Hindemith, Paul: Interludium (Valse), Ludus Tonalis. Zweite Sonate fuer Klavier.

Janequin, Clement: Guillot ung jour.

Maffoni, Hieronimo: Quam pulchri sunt gressus tui.

Mozart, W. A.: Quartet no. 23, K. 590. Quintet fuer Piano-forte, Oboe, Clarinette, Horn, und Fagott, K. 452. Sonate no. 15, K. 545.

Obrecht, Jacob: Tsat een meskin.

Prokofieff, Serge: Pensees, op. 62. Two pieces, op. 3.

Rachmaninoff, Sergei: Symphony no. 2.

Saint-Saens, Camille: Vogue, vogue la Galere.

Schubert, Franz: Die Stadt. Liebesbotschaft.

de Sermisy, Claudin: Au ioly boys.

Stravinsky, Igor: Octet for Wind Instruments.

Walk, Hugo: Er ist's.

Analyses of these works indicate that structural proportions based on phi most frequently employed fractional values (5/8 and 8/13), although a few instances were noted of proportions based on the accurate reference value for phi, 0.618. Events frequently placed at significant structural locations include melodic repetitions--such as recapitulation--and disturbances to flow--such as meter changes or fermatas. Also high in structural importance were musical events affecting the dynamic properties of a work: loudness, note density, register, rate of activity and similar factors. The commonality of mathematically-based structural proportions to a wide range of musical periods suggests that, as much as any other single factor, structural coherence is essential in musical organization.

ABSTRACT

THE USE OF THE TUBA IN THE SYMPHONIC POEMS OF RICHARD STRAUSS

John L. Smith, Jr., D.M.A.
University of Missouri-Kansas City, 1979

The purpose of this dissertation is to define the role of the tuba in the symphonic poems of Richard Strauss. In order to place this analysis within historical perspective, background information concerning the tuba, Strauss, and the symphonic poems was provided. Berlioz's Treatise on Instrumentation, as revised by Strauss, was examined to provide a comparative analysis between the tuba orchestration techniques as espoused in the text and the scoring techniques that were evident in the poems.

The tuba parts of the nine symphonic poems were examined in terms of individual and ensemble characteristics. Individual characteristics were analyzed according to the following criteria: frequency of use, pitch range, tessitura, dynamic range, articulation, melodic characteristics, solo use, rhythmic treatment, special effects, and idiomatic problems. An examination of ensemble characteristics provided information concerning the relationships between the tuba and the orchestra. Criteria considered for this analysis concerned heterogeneous instrumentation, multiple tubas, harmonic voicing, timbre effects, comparative dynamics, balance and blend, and special techniques. When applicable, data comparisons were made between (1) the first four and last five symphonic poems, (2) the bass and tenor tuba parts, and (3) the tuba and trombone parts.

The conclusions found in this study attest to the superb orchestrational skills attributed to Strauss. He explored and employed many new concepts in orchestrating the tuba. Such orchestration techniques presented the tuba as an important and equal constituent of the orchestral resources.

ABSTRACT

WILLIAM LEVI DAWSON (b. 1898) AND AN ANALYSIS OF HIS NEGRO FOLK SYMPHONY (1932; Rev. 1952)

Jacqueline Kay Thompson, M.M.
University of Missouri-Kansas City, 1979

William Levi Dawson was born in Anniston, Alabama, on September 26, 1898. At the age of thirteen, Dawson ran away from home to Tuskegee Institute in Alabama where he received his first formal musical training. After graduating from the Tuskegee Institute in 1921, Dawson taught at the Kansas Vocational College in Topeka, Kansas, and later became the director of music at Lincoln High School in Kansas City, Missouri.

While in Kansas City, Dawson studied theory at the Horner Institute of Fine Arts and composition with Sir Carl Busch. In 1925, Dawson received a Bachelor of Music degree (with honors).

Dawson left Kansas City for Chicago, where he studied composition on scholarship with Adolph Weidig at the American Conservatory and received a Masters degree in composition in 1927. He remained at the Conservatory doing post-graduate work with Dr. Thorvald Otterstrom. It was during this post-graduate study that Dawson began work on his Negro Folk Symphony, a symphony in the Negro folk idiom, based on authentic Negro folk music, but in the same symphonic form used by composers of the romantic-nationalistic school: Brahms, Dvorak, and Tchaikovsky.

Dawson completed his Negro Folk Symphony in 1932 and it was brought to the attention of Leopold Stokowski. Stokowski, conductor of the Philadelphia Orchestra, scheduled a world premiere performance of Dawson's symphony on November 16, 1934 at Philadelphia's Academy of Music.

Returning to the United States in 1952 from a visit to West Africa, Dawson turned to his symphony

and revised the scoring of the third movement, infusing it with rhythmic characteristics strongly inspired by his African visit. When it was finished, Dawson again contacted Stokowski, who had recently organized the American Symphony Orchestra. The recording of this revised version was released during the one hundredth anniversary of the Emancipation Proclamation (1963).

Dawson gained international acclaim as director of the famed Tuskegee Institute Choir. More significant perhaps, are his compositions and arrangements of music in the Negro spiritual genre as important sources for this segment of musical America.

Dawson's Negro Folk Symphony (1932; Rev. 1952) is a three-movement work utilizing Negro folk melodies as thematic material. Characteristic of the themes is a short-long (syncopated) rhythm and a tendency to introduce them with a solo wind instrument. Dawson also uses what he calls a "leading motive" in all three movements after it appears in the opening measures of the symphony.

A complete list of works and a discography follows the symphony analysis.

ABSTRACT

A STUDY OF ATTITUDES, COMPETENCIES, AND UNDERSTANDINGS ACHIEVED THROUGH THE MEDIUM OF ELECTRONIC MUSIC IN SELECTED UPPER ELEMENTARY AND JUNIOR HIGH SCHOOL CLASSROOMS

The University of North Dakota, 1972
Faculty Advisor: Professor Clyde M. Morris

Fredrick R. Willman, Ph.D.
University of Missouri-St. Louis
Music Education

Problem

The purpose of this study was to test a basic upgraded program of study in electronic music

suitable for use in grades five through eight.

Procedure

The research population consisted of 339 students drawn from two elementary schools and one junior high school in the Grand Forks, North Dakota, Public Schools. These students were grouped into seven pairs of experimental and control groups. For one semester the experimental groups received music instruction using an electronic music-based curriculum while the control groups received more general, traditional music instruction. Measurements were made with a battery of four pre/post-tests to determine any possible significant differences in attitude toward music, competencies in electronic music, and musical concept development that existed between the experimental and control groups.

The statistical techniques utilized for this study were analysis of covariance and analysis of variance by regression. Analysis of variance was included to identify any effects that could be attributed to the covariate. The .05 level of confidence was established a priori for determining the significance of the analyses.

Findings

1. There were no significant differences between the control and experimental groups in attitude toward music.

2. In a majority of the groups tested, the experimental groups showed a significantly better mastery of competencies in electronic music than did the control groups.

3. Exposure to and involvement with electronic music contributed to a higher level of conceptual development for a majority of the experimental groups (for the portion of the musical concepts measured by the fourth test) than for the control groups.

4. Students' opinions of electronic music and their reactions to its inclusion in music class are much more positive in seventh and eighth grades than in fifth and sixth grades. There was a wide range of likes and dislikes; most students were able to tell quite specifically why they either liked or disliked electronic music. However, the comments seem to indicate that most students had not yet reached the point of being able to identify with the aesthetic aspects of electronic music.

Recommendations

1. Some electronic music should be introduced at each grade level with the main emphasis occurring at the seventh and eighth grades. Becoming familiar with terms and techniques appears to be one of the greatest obstacles for students. A gradual acquisition of necessary knowledge and skills could be much more easily developed if electronic music were started in the lower grades.

2. The development of musical concepts (through exposure to and involvement with electronic music) that are applicable to many kinds of music has not been conclusively established by this study. Further study should be undertaken to identify these concepts. The need for a reliable test instrument is crucial.

3. Electronic music's many sound capabilities lend themselves to unlimited development of the creative capacity. Additional studies should be made to uncover the potential of electronic music in relation to research findings in other phases of creativity.

4. Electronic music study should last for a period of time that will enable students to master the mechanical aspects well enough for the aesthetic aspects of the music to become the central focus of the learning experience.

5. An electronic music-based class should be considered, on an elective basis, as an alternative to the traditional general music class in grades