SECONDARY SCHOOL STUDENTS' ABILITY TO RESPOND TO THE EXPRESSIVE QUALITIES OF MUSIC

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Introduction

Every normal human being, no matter how young or old, responds to music in one way or the other. There is a conclusive evidence that the unborn responds to sound and music. Tracing the developmental growth of children's response to music, O'Brien (1983), Abeles et al (1984) contend that children from zero to two years respond to sounds and music. O'Brien and Abele also observe that infants respond to sounds quite readily, learning to differentiate between varied pitches, high or low and harsh or pleasant.

It has also been observed that pre-school children experience, in diverse ways, music performed in their immediate environments. Ogbe (1975) asserts that, pre-school pupils happily join their peers in playing musical games, singing and constructing their own improvised musical instruments with which they create music.

During these make-believe plays children exhibit a high level of concentration and motivation not only in the creation of music, but also in responding to the music they perform (Ogbe, 1975). At the early impressionable years, pupils (between the ages of one and five), begin to respond to music in their environment (Evans, 1975). They explore every opportunity to rehearse musical patterns they heard during a past musical event. As noted by Ogbe (1975), pupils' involvement in the creation of music is mostly observed after a music festival or any other occasion during which free open-air dance takes place. By interacting with music in the environment, the pupil absorbs the music from his/her surroundings with which he/she lays a firm foundation of strategies for responding to music later in life.

Adolescents' response to music has been discussed at length in the literature (Amuah, 1998, Webster and Zimmermann,1983). Amuah (1998), for instance, studied adolescent students' preference for music and observed that the tendency to respond to a particular type of music depends on the individual's taste for that musical type. He also noted that the adolescent experiences dramatic changes in his/her musical taste as well as the degree of his/her responsiveness to music as he/she grows into adulthood. As the adolescent grows, he/she develops cognitive structures that enables him/her to deal with complex musical information that includes complex rhythmic and pitch patterns as well as other elements of music that may not have appealed to him/her while a child of tender years (Hargreaves, 1982). Attending to musical information with a sense of detail becomes the hallmark of adolescents' response to music. They are strengthen cognitively to deal with the expressive qualities of music.

Response to music is a vital dimension of a musical experience. Its importance to the acquisition of musical behaviours such as performance, listening, creating and analysing has been observed by music scholars and music educators (Konecni, 1982; LeBlanc,1980; Berlyne, 1974; Sluckin, Hargreaves and Colman, 1982; Amuah, 1995). Musical response is operationally defined in this study as a reaction to the expressive qualities of music. This includes aesthetic and affective reactions to music. Though these terms have been used interchangeably in the literature, most scholars have made a distinction between the two. Those who draw a distinction between them, view aesthetic reaction or response as intense, subjective and personal experience resulting from an interaction with a musical event. On the other hand, they regard affective responses as those involving some emotional component, and are generally regarded as being more superficial. Reimer (1989), whose philosophy of art is consistent with the absolute expressionist's view, indicates that an individual's ability to respond to the aesthetic qualities of art is founded on his/her ability to perceive the expressive qualities of music. This study explores students' ability to perceive the expressive qualities of music.

Many a music educator has postulated that the goal of music education is to assist the student to react to the expressive qualities of music. Reimer, for instance, intimates that musical interaction should end up with the individual reacting feelingfully to the expressive qualities of music. This he calls aesthetic experience.

Expatiating on his philosophy of music education, Reimer avers that the development of students' sensitivity to aesthetic objects, including music, involves two levels of attainments: i) responding to the expressive qualities of music and ii) reacting, feelingfully, to the music. To Reimer, the former dimension is a pre-requisite for the attainment of the *ultimate* which is the "profound feelingful reaction to music"(Reimer, 1989, p.46). Though this level of musical experience could be attained through the musical behaviours of performance, composing, and analysising, it is through the listening experience that most people attain substantial benefits from the music they experience.

Listening is often the channel (musical behaviour) through which many people experience the power of music. However, it is sad to say that very few people derive maximum benefits from what they listen to. The reason is not far fetched, for, most people operate at the sensuous level whenever they interact with music through listening (O'Brien, 1983). It has been observed that very few people respond to music aesthetically, a process that involves, not only reacting to the expressive qualities of music, but also responding to it *feellingfully*.

In the elementary school, pupils should be assisted to develop a framework for responding to music aesthetically. The first step towards the achievement of this goal is to help pupils to perceive the expressive qualities of music. And this can be accomplished through the design of effective methodology, informed by research on children's musical behaviour, for teaching *directed* listening lessons.

The current study, an additional material to augment extant research on pupils' musical behaviour, is a step in the right direction.

Theoretical Basis

The study is based on the aesthetic theory as espoused by the absolute expressionists. The absolute expressionists' major claim is that, the arts offer meaningful cognitive experiences and thus enable the individual to obtain optimal enjoyment of the arts including music. They postulate that one derives meaning from a work of art by attending to the internal qualities which make the work a created thing. Expatiating on this view, Reimer (1989) asserts that "in music you would go to the sounds themselves --melody, rhythm, harmony, tone colour, texture, dynamics, form -- and attend to what those sounds do" (p. 16).

The theory places emphasis on the ability to perceive the expressive qualities of music, a resultant of the sonic dynamism which is set up by the organisation of the elements of music. This perceptual capacity is of vital importance if students could be helped to derive maximum benefit from music. One of the elements of music which music scholars single out as regards its role in establishing the expressive qualities of music is dynamics (the varying degrees of sound intensity). This study, therefore, focuses on students' ability to perceive dynamic levels of music.

The study is also founded on Piaget's theory of cognitive development. The theory establishes a strong relationship between cognitive development and maturity.

He postulates that human beings inherit two basic tendencies: organisation (the tendency to systematise and combine processes into coherent general systems) and adaptation (the tendency to adjust to environment). These tendencies govern mental functioning. The theory states that intellectual processes transform experiences into a form (schemes) that the child can use in dealing with new situations.

Schemes are organised patterns or thought that children formulate as they interact with the environment, parents, teachers, and age mates. In other words, schemes form internal framework that the child uses to assimilate new knowledge and experiences. This theory has supported many music education research findings that include studies in music listening behaviour (Haack, 1980; Pressing, 1984; Zimmerman, 1964). It is believed that children develop complex musical schemes that enable them to deal with complex music as they grow. It is envisaged that this theory will enable the researchers to explain the findings of this study.

Purpose of the Study

This study sought to investigate the differences among Basic School pupil's abilities to perceive the expressive qualities of music. Specifically, the study concentrated on the relationship between age and ability to respond to the dynamic qualities of music.

Research Questions

Based on the purpose of the study, the researchers sought to answer the following questions:

1. Do pupils of the various class levels differ in their ability to perceive dynamic qualities of music?
2. Do lower primary pupils differ from upper primary school pupils with respect to their ability to perceive the dynamic qualities of music?
3. Do upper primary pupils differ from J.S.S. students in the ability to perceive the dynamic qualities of music?
4. Do primary school pupils differ from J.S.S. students in the ability to perceive the dynamic qualities of music?

The following hypotheses were tested

H_0: There is no significant difference among pupils of the various class levels in their ability to perceive dynamic qualities of music.

H_1: There is significant difference among pupils of the various class levels in their ability to perceive dynamic qualities of music.

H_0: There is no significant difference between lower and upper primary pupils in their ability to perceive dynamic qualities of music.

H_1: There is significant difference between lower and upper primary pupils in their ability to perceive dynamic qualities of music.

H_0: There is no significant difference between upper primary and J.S.S pupils in their ability to perceive dynamic qualities of music.

H_1: There is significant difference between upper primary and J.S.S pupils in their ability to perceive dynamic qualities of music.

H_0: There is no significant difference between primary and J.S.S. pupils in their ability to perceive dynamic qualities of music.

H_1: There is significant difference between upper primary and J.S.S pupils in their ability to perceive dynamic qualities of music.

Significance of the Study

It is hoped that the results of this study will not only inform educational planners and curriculum developers, but also influence their decisions as they develop curriculum to enhance the musical behaviour of the Ghanaian child. It is also envisaged that the results of the study will guide music teachers and educators to adopt appropriate pedagogical strategies to assist pupils to develop their abilities to respond, aesthetically, to the expressive qualities of music.

Population and Sample

The target population included basic school pupils (Basic 1 -9) from a town in the Volta Region of the Republic of Ghana. In all, 270 pupils were selected for the study. The sample was made up of 158 boys and 112 girls. This sample was drawn from seven out of the twelve public basic schools in the town under study. The following strategy was adopted to sample the schools involved in this study. Firstly, seven schools from which the subjects were selected were randomly sampled using a table of random numbers. Secondly, all the pupils of these schools were subsumed under nine strata with each class or grade level constituting a stratum. The Linear systematic sampling technique using the format developed by Leedy (1989) was used in the selection of the sample involved in the study. (See fig. 1).

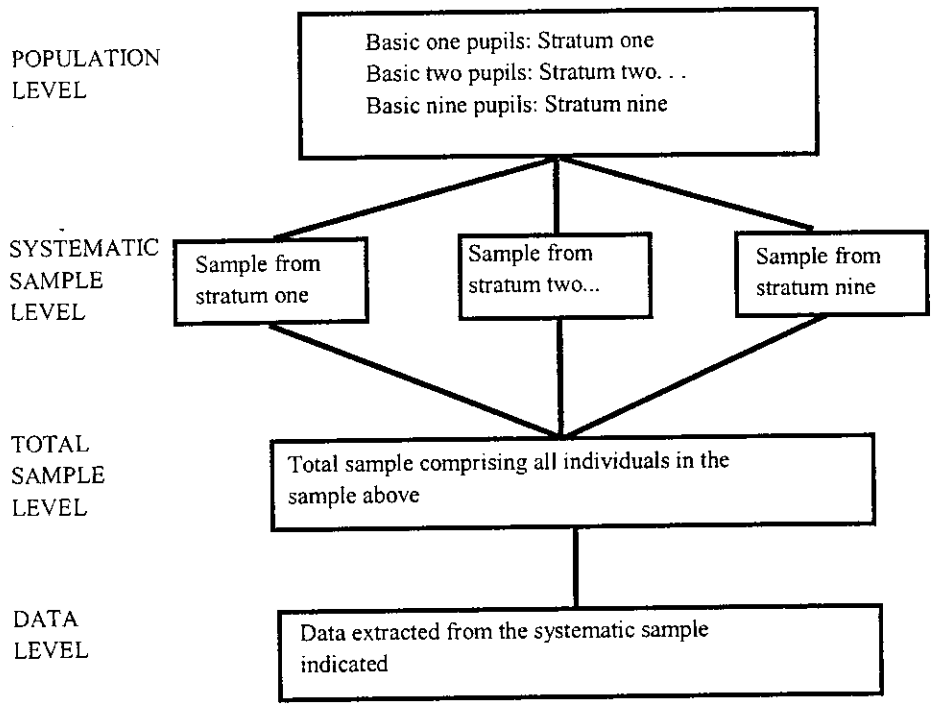

Fig. 1 *Leedy's Format for Sample selection (p. 39)*

Research Design

The study was conducted within the framework of the cross-sectional design. This design is one of the two designs that have been recommended by Borg and Gall (1989) as appropriate for the study of the variables involved in the current research. Ary et al (1990), also assert that a cross-sectional method is utilized to study "subjects of different age levels at the same point in time." Since the focus of attention of this study is to observe relationships among variables in a *single-setting design*, the cross-sectional research design was adopted. The efficacy of this method or procedure has been demonstrated in studies similar to the current one (Hufstander 1977; Darrow, Haack and Kuribayashi 1977; Webster and Zimmerman 1983; and Hedden 1988).

Research Instrument

For a careful and systematic collection of data, the following steps were followed to design a research-made instrument of the collection of data:

An initial seventeen tunes from the following genres: Hymns, Gospels, Highlife, Reggae, Patriotic and Traditional (Agbadza, Adowa, Borborbor, Kpanlogo and Gbolo) music were played and recorded. A table of specification presented in Table 1 reflects the seventeen items that were initially recorded.

Table 1

Table of Specification

TITLE	GENRE
1. "Cecilia" Ghana Praise No.17	Hymn
2. Austria	Patriotic/Hymn
Methodist Hymn No. 16	
3. "God Save our Gracious King"	Patriotic/Hymn
Methodist Hymn No. 879 (British National Anthem)	Hymn/Patriotic
4. "God Bless Our Homeland Ghana" Ghana National Athem	Patriotic
5. "For God and Our Country" American National Anthem	Patriotic
6. "Tete Nyame ye be som wo"	Gospel
7. "Yehowa ye yi wo aye"	Gospel
8. "Da N'ase"	Gospel
9. "Mesi me dan"	Gospel
10. "Yaa Amponsah"	Traditional - Highlife
11. "Ashie Tatale"	Traditional - Kpanlogo
12. "Agbae mide agba nam"	Traditional - Agbadza
13. "Adu e bo yen dwa"	Traditional - Adowa
14. "Borbor mido da li"	Traditional - Borborbor
15. "No woman no cry"	Reggae
16. "Gbolo viwo"	Traditional - Gbolo
17. "Daa Ye be da W'ase"	Reggae tune

This initial recording was done at the University of Cape Coast by the researchers and some other students of the Department of Music, University of Cape Coast. The following gadgets were used for the recording: J.W-50 Rolland

Synthesizer; Tone generator (Yamaha TG100 with the aid of Casio HT-300 Keyboard as editors); a Macintosh LC475, computer; Midi translator II; and Panasonic S-XBS Double cassette compartment audio machine.

Each of the tunes was recorded twice. One of them was labeled "A" and the other "B". The two recordings were made different in terms of their dynamic levels. Only one of the pair either recording "A" or recording "B" had the dynamic levels. To control for the effect of tone colour, all the seventeen items were performed in pianoforte timbre.

The pieces were duplicated at the Centre for Intercultural Learning and Talent Development (CILTAD/AGORO) Project in Cape Coast, using, A Telex ACC-400 Cassette Duplicator. The finished tapes were distributed to five renowned music scholars and music educators for appraisal using the following rating strategies.

A. Very reliable and valid
B. Quite reliable and valid
C. Just reliable and valid
D. Not reliable and valid

Kendals coefficient of concordance (W) was used to establish the inter-judge agreement on the validity and reliability of the test items. The inter-judge reliability for the fourteen items, finally accepted and recommended by the judges as valid and reliable, was 0.61.

The researcher-made instrument was pilot-tested twice on a randomly selected sample from two public basic schools in a town that has school- and pupil-characteristics similar to schools in which the real test was administered. The scores obtained were further analysed to test for validity and reliability of the instrument. The odd-even split-half reliability test yielded a correlation coefficient of 0.70. The researchers observed from the literature that a correlation co-efficient of 0.70 was adequate to establish the power of the test to yield valid and reliable data.

Results

There were thirty respondents for each class or grade level, and six classes each from the seven schools were involved in the study.

Table 2

The Results of the General Performance on Test of Ability to Respond To the Expressive Quality of Music.

GENDER	FREQUENCY	%	OVERALL MEAN SCORE

M	158	58.5	8.68
F	112	41.5	8.10
Total	**270**	**100.0**	

Table 2 shows results of the overall performance of the pupils who participated in the test. The mean score obtained by male pupils was 8.7 while that of girls was 8.10.

A study of Table 3 indicates that there was generally a consistent increase in mean scores, for both boys and girls, from one grade level to the other (ascending). The mean score

Table 6
Mean Scores Of Pupil's Ability to Perceive Dynamic Expressive Qualities Of Music By Gender And Class

CLASS	GENDER	N	%	M.S.
Basic 1	M	17	56.7	4.47
	F	13	43.3	4.15
Basic 2	M	19	63.3	6.05
	F	11	36.7	4.55
Basic 3	M	16	53.3	6.88
	F	14	46.7	6.64
Basic 4	M	20	66.7	9.25
	F	10	33.3	8.50

Basic 5	M	18	60.0	10.28
	F	12	40.0	7.17
Basic 6	M	17	56.7	10.12
	F	13	43.3	10.15
Basic 7	M	16	53.3	9.81
	F	14	46.7	10.57
Basic 8	M	20	66.7	10.3
	F	10	33.3	10.2
Basic 9	M	15	50.0	11.0
	F	15	50.0	11.47

obtained by grade 1 boys and girls were 4.5 and 4.2 respectively; these scores consistently increased across grades to 11.0 and 11.5 for Basic 9 boys and girls respectively. However, it is interesting to note that there was a drop in the mean scores for Basic 5 girls (7.2). In Basic 6 the mean score for the girls picked up again (10.2). A similar observation is made between the boys of Basic 7 (9.8).

Table 4

Descriptive Statistics of the Ability to Perceive Dynamic Qualities of Music Scores by Class.

CLASS	MEAN	S.D.	SEMean	VAR	MIN	MAX	Range
Basic 1	4.333	3.032	.554	9.195	0	9	9
Basic 2	5.500	3.037	.555	9.224	1	10	9
Basic 3	6.767	3.692	.674	13.663	0	12	12
Basic 4	9.000	2.754	.503	7.586	1	13	12
Basic 5	9.033	2.414	.401	2.826	2	12	10
Basic 6	10.133	1.676	.306	2.809	6	12	6

Basic 7	10.167	2.276	.415	5.178	4	13	9
Basic 8	10.267	1.946	.355	3.789	3	13	10
Basic 9	10.733	.944	.172	.892	9	13	3

Table 4 shows a descriptive statistics of scores obtained by the various grade levels. The table indicates that there was a consistent increase in mean scores as the grade levels increased from the lowest to the highest, though the differences between adjacent grade levels, with the exception of the difference between Basic 3 and 4 were very small. The variability in the distribution for each class was also generally small; the greatest variability is observed with the Basic 3 distribution.

Hypothesis Testing

Four null hypotheses were tested to examine basic school pupils' ability to perceive the dynamic qualities of music. The results are presented in the form of response to each of the null hypotheses.

1. H_0: *There is no significant difference among pupils of the various class levels in their ability to perceive expressive qualities of music.*

   H_1: *There is significant difference among pupils of the various class levels in their ability to perceive and identify dynamic expressive qualities of music.*

The test of significance for the null hypothesis yielded results presented in the form of tables establishing the relationship between adjacent class levels.

Table 5

Summary Table For Anova Results: Basics 1 And 2 Pupils

SOURCE	Sum of Squares (SS)	Degrees of Freedom (df)	Mean square (MS)	F-ratio
Between Groups	20.417	1	20.417	2.217
Within Groups	534.167	58	9.210	
Total	554.584	59	9.400	

Critical F-value = $F_{0.05}$ (1,58) = 4.00

Table 5 shows the results of the relationship between Basic 1 and 2 pupils as regards their ability to respond to the dynamic qualities of music. The Analysis of Variance (ANOVA) indicates an F - ratio of 2.22. The critical F - value at an alpha level of 0.05 level of significance is 4.00. There was not enough evidence to reject the null hypothesis and hence, there was no significant difference between pupils of Basic 1 and 2 in their ability to perceive dynamic qualities of music.

Table 6

Summary Table For Anova Results: Basics 2 And 3 Pupils' Scores

SOURCE	Sum of Squares (SS)	Degrees of Freedom (df)	Mean square (MS)	F-ratio
Between Groups	24.067	1	24.067	2.106
Within Groups	662.866	58	11.429	
Total	686.933	59	11.643	

Critical F-value = $F_{0.05}$ (1,58) = 4.00

Table 6 is the ANOVA summary table explaining the relationship between Basic 2 and 3 pupils as regards their ability to perceive the dynamic qualities of music. The results indicate an F - ratio of 2.11. However, the critical F-value at 0.05 level of significance is 4.00. There was not enough evidence to reject the null hypothesis. There is, therefore, no significant difference between Basic 2 and 3 pupils in their ability to perceive dynamic qualities of music.

The results of the study as shown in Table 7 indicate that there was a significant difference between pupils of Basics 3 and 4 in the ability to perceive the dynamic qualities of music. The null hypothesis could not be accepted because the observed F-ratio of 7.1 exceeds the critical F-value, at 0.05 alpha level of significance, of 4.0.

Table 7
Summary Table For Anova Results: Basics 3 And 4 Pupils

SOURCE	Sum of Squares (SS)	Degrees of Freedom (df)	Mean square (MS)	F-ratio
Between Groups	74.817	1	74.817	7.052
Within Groups	615.367	58	10.610	
Total	690.183	59	11.698	

Critical F-value = $F_{0.05}$ (1,58) = 4.00

Basic 4 (9.0) pupils were more capable of perceiving the dynamic qualities of music than Basic 3 pupils (6.8).

Table 8
Summary Table For Anova Results: Basics 4 And 5 Pupils

SOURCE	Sum of Squares (SS)	Degrees of Freedom (df)	Mean square (MS)	F-ratio
Between Groups	.017	1	.017	.002
Within Groups	388.967	58	6.706	
Total	388.983	59	6.593	

Critical F-value = $F_{0.05}$ (1,58) = 4.00

The F-value (.002) presented in Table 8 is less than the F-ratio of 4.0 at an alpha level of .05. There was not enough evidence to reject the null hypothesis. Thus, no significant difference was observed between Basic 4 and 5 pupils in their ability to perceive the dynamic qualities of music.

Table 9
Summary Table For Anova Results: Basics 5 And 6 Pupils

SOURCE	Sum of Squares (SS)	Degrees of Freedom (df)	Mean square (MS)	F-ratio
Between Groups	18.150	1	18.150	4.204
Within Groups	250.433	58	4.316	
Total	268.583	59	4.552	

Critical F-value = $F_{0.05}$ (1,58) = 4.00

In Table 9, the F-ratio recorded (4.2) is more than the critical F-value at an alpha level of 0.05 (4.00). Hence, there was enough evidence to reject the null hypothesis. Thus, there was a significant difference between pupils of Basics 5 and 6 in their ability to perceive dynamic expressive qualities of music.

The F-ratio of .004, shown in Table 10 is less than the critical F-value, 0.05 alpha level of significance, of 4.00. The null hypothesis has therefore been accepted--there was no significant difference between pupils of Basics 6 and 7 in their ability to perceive dynamic expressive qualities of music.

Table 10
Summary Table For Anova Results: Basics 6 And 7 Pupils

SOURCE	Sum of Squares (SS)	Degrees of Freedom (df)	Mean square (MS)	F-ratio
Between Groups	.017	1	.017	.004
Within Groups	231.633	58	3.994	
Total	231.650	59	3.926	

Critical F-value = $F_{0.05}$ (1,58) = 4.00

The statistic presented in Table 11indicates that there is not enough evidence to reject the null hypothesis stating that there is no significant difference between Basic 7 and 8 in their ability to perceive the dynamic qualities of music.

Table 11
Summary Table For Anova Results: Basics 7 And 8 Pupils

SOURCE	Sum of Squares (SS)	Degrees of Freedom (df)	Mean square (MS)	F-ratio
Between Groups	.150	1	.150	.033
Within Groups	260.033	58	4.483	
Total	260.183	59	4.410	

Critical F-value = $F_{0.05}$ (1,58) = 4.00

Table 12
Summary Table For Anova Results: Basics 8 And 9 Pupils

SOURCE	Sum of Squares (SS)	Degrees of Freedom (df)	Mean square (MS)	F-ratio
Between Groups	3.267	1	3.267	1.396
Within Groups	135.733	58	3.340	
Total	139.000	59	2.356	

Critical F-value = $F_{0.05}$ (1,58) = 4.00

The ANOVA test performed on scores obtained on Basic 8 and 9 pupils' ability to perceive dynamic expressive qualities of music yielded F-ratio of 1.4. This ratio is below the critical F-value at an alpha level of 0.05 level of significance. There was therefore very little evidence to reject the null hypothesis. The implication was that there was no significant difference between respondents of Basics 8 and 9 in the ability to perceive dynamic expressive qualities of music.

2. H_0: *There is no significant difference between lower and upper primary pupils in their ability to perceive the expressive qualities of music.*

   H_1: *There is significant difference between lower and upper primary pupils in their ability to perceive the expressive qualities of music.*

Table 13

Summary Table For Anova Results: Lower/Upper Primary

SOURCE	Sum of Squares (SS)	Degrees of Freedom (df)	Mean square (MS)	F-ratio
Between Groups	668.939	1	668.939	78.658
Within Groups	1513.789	178	8.504	
Total	2182.729	179	12.194	

Critical F-value = $F_{0.05}$ (1,78) = 3.84

The ANOVA conducted on the scores obtained by lower and upper primary pupils' ability to perceive dynamic qualities music indicates that, the F-ratio was 78.7 and the critical F-value at 0.05 level of significance was 3.84. The null hypothesis was rejected. There is, therefore, significant difference between pupils of lower and upper primary in the ability to perceive dynamic qualities of music.

3. H_0: *There is no significant difference between upper primary and J.S.S pupils in their ability to perceive the expressive qualities of music.*

   H_1: *There is significant difference between upper primary and J.S.S pupils in their ability to perceive the expressive qualities of music.*

Table 14

Summary Table For Anova Results: Upper Primary And Junior Secondary School

SOURCE	Sum of Squares (SS)	Degrees of Freedom (df)	Mean square (MS)	F-ratio
Between Groups	45.000	1	45.000	10.181
Within Groups	786.778	178	4.420	
Total	831.778	179	4.647	

Critical F-value = $F_{0.05}$ (1,78) = 3.84

Table 14, a summary of ANOVA on scores obtained by upper primary pupilsand junior secondary school students, indicates an F-ratio of 10.2 which is higher than the critical value of 3.84, at an alpha level of 0.05. The null hypothesis was rejected there was a significant difference between pupils of the two categories in their ability to perceive the dynamic qualities of music.

4. H_0: *There is no significant difference between primary and J.S.S. pupils in their ability to perceive the expressive qualities of music.*

   H_1: *There is significant difference between upper primary and J.S.S pupils in their ability to perceive the expressive qualities of music.*

Table 14

Summary Table For Anova Results: Lower Primary, Upper Primary And Junior Secondary School

SOURCE	Sum of Squares (SS)	Degrees of Freedom (df)	Mean square (MS)	F-ratio
Between Groups	1183.252	2	591.622	87.506
Within Groups	1805.178	267	6.761	
Total	2988.430	269	11.108	

$$F0.05\ (2, 267) = 2.99$$

Table 14 indicates that, the calculated F-ratio of 87.5 exceeds the critical F-value at an alpha level of significance of 0.05 (2.99). The evidence available was strong enough for a rejection of the null hypothesis.

Discussion

The findings of the study revealed a significant difference between lower primary and upper primary pupils in their ability to perceive the dynamic qualities of music. A similar observation was made between upper primary and junior secondary school students. This observation, improved musical behaviour as a function of age, is consistent with studies conducted by music education researchers working in the area of music conservation (Zimmerman, 1964; Webster and Zimmerman, 1983; Botvin, 1974; Foley, 1975; Serafine, 1975). Zimmerman (1964), a pioneer in the area of music conservation research, observed that 8-year-old children were better on music conservation tasks than 5-year olds. In a follow-up study on music conservation, Zimmerman and Sechrest, (1968) noted that children's ability to conserve melodies differed with age. Music Education researchers studying other dimensions of children's musical behaviours have supported the hypothesis that improvement in children's listening behaviour is a function of age (Rodriguez, 1995; Dolgin and Adelson, 1990; Petzold, 1969). Results emerging form the current study, though unique, supports extant literature as regards the strong relationship that exists between the development of musical behaviour and maturity.

In addition, the observations emerging from the current study, to a greater extent, mirror cognitive developmental stages as espoused by Piaget -- preoperational, concrete operational, and formal operational stagies of cognitive development. According to Piaget cognitive development is hierarchical and that the thought process of children in the pre-operational stage is different from that of the concrete operational stage. Similarly, children at the formal operational stage think differently and have higher ability to deal with abstractions, form hypotheses, solve problems systematically, engage in mental manipulations than those in the concrete operational stage. The current study indicated that lower primary pupils' (6-8 years old) performance on the ability to perceive the dynamic qualities of music tasks was lower than pupils in the upper primary school (9-11 years old). On the other hand, upper primary schools pupils performed lower on the same test than the junior secondary school pupils (12-14 years old).

Piaget notes that children of the pre-operation stage of cognitive development tend to focus attention on dominant features of events and situations. He refers to this behaviour, in his writings, as *perceptual centration.* He avers that perceptual centration is a very strong tendency to focus attention on only one characteristic of an object or aspect of a problem or event at a time (Biehler and Snowman, 1990). This attribute may have influenced lower primary pupils' performance on the ability to perceive the dynamic qualities of music tasks. Research has indicated that pitch and rhythm (constituting the melody of a piece of music) are the most attractive elements in music (Leonhard and House, 1959; Abeles et al, 1984; Haack,1992). Lower primary pupils may have focused their entire attention on the melody of the tunes used as tasks for the study and paid less attention to the dynamics presented in the pieces. The lower primary pupils lacked the cognitive ability to deal with dynamic qualities of music.

A critical review of the contrast between upper primary pupils' performance and that of the lower primary reveals that the results of the current study is consistent with Piagets' stage theory of cognitive development. It therefore becomes apparent that Piagets' theory is likely to provide meaningful explanation for a clear understanding an interpretation of the findings of the current research.

While most of the lower primary pupils were at the pre-operational stage the upper primary pupils were at the concrete operational. Children at the concrete operational stage are less influenced by perceptual centration and they are capable of dealing with *class inclusion* (constructing hierarchical relationships among related classes of items) (Biehler and Snowman, 1990). They can also engage in operational thinking, though this mental activity is limited to objects that are actually present or

that children have experienced concretely and directly. These characteristics may have enabled the upper primary pupils to perform better than the lower primary pupils on the ability to perceive dynamic qualities of music tasks. The upper primary pupils were capable of processing, cognitively, the melody of the pieces as well as additional elements of music which included dynamics in the case of tunes used in the collection of data for this study.

The junior secondary school students' superior performance may be attributed to the level at which they were operating on Piaget's cognitive developmental stages (formal operational). At this stage, pupils have, not only developed the mental capacity to engage in mental manipulations but also, developed the requisite cognitive structures to deal effectively with abstract information. Music is and abstract art that requires a level of cognitive capacity needed to process abstract information. The formal operation state is characterized with cognitive capacity that enables an individual to engage in abstract thinking. This characteristics may have given the junior secondary school students an urge over the upper primary pupils in their ability to perceive the dynamic qualities of music.

It could be noted that there was no difference between adjacent years or classes in the data analysed. This observation seems to suggest that the ability to children's ability to perceive dynamic qualities of music may be categorised into stages of development as Piaget's theory of cognitive development. The need to conduct series of similar studies to establish this hypothesis cannot be over emphasised.

Recommendations

The results of the study have indicated that not only do children differ in their ability to perceive the dynamic qualities of music but also these differences are seen among category of children operating at a particular stage in their mental development. Thus it was observed that lower primary, upper primary and junior secondary schools students differed in their ability to perceive the dynamic qualities of music. Curriculum designers should give this observation due consideration if a balanced music programme could be designed to cater the music perceptual needs of pupils and students.

Helping children to sharpen their perceptual powers to deal with music's expressive qualities is of vital importance. Hence properly trained teachers equipped with the requisite skills to teach music should be employed to teach music in schools including primary schools. A new approach to music teaching that emphasise experiential learning should be advocated. Lecturers in involved in the training of

music teachers should be oriented toward this new approach to help music teacher trainees adopt methods that will enhance pupils' musicality through the experience of music.

It is also recommended that teachers should make music listening activities a regular feature of their music instructions. One means by which teachers can do this is to teach pupils music with musical examples. Such an approach will afford pupils the opportunity to develop their abilities to perceive the expressive qualities of the elements of music as they are unveiled in a piece of music. Teachers should as a matter of importance and for the good of the teaching and learning of the subject (music) avoid teaching music "mechanically" as if a music class were a mathematical class.

Recommendation For Further Research

The findings of the study have raised issues that seriously need to be addressed.

1. What factors actually facilitate the development of Ghanaian pupils ability to perceive dynamic qualities of music?
2. Is there any difference in rural and urban pupils' ability to perceive dynamic qualities of music?
3. Will there be any significant difference between every lower primary and upper primary and also upper primary and junior secondary school pupils in Ghana in their ability to perceive the dynamic qualities of music?

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