



Music Pedagogy and Learner Acquisition of Creativity and Critical Thinking Skills

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Music is one of the subjects reintroduced in the primary school curriculum under the Competency-Based Curriculum (CBC). The Kenya Institute of Curriculum Development (KICD) in 2017 stated that the content in Grade Four is organised in three broad strands, which are: Performing, creating and composing and listening, responding and appreciation. The objective of this study was to determine the effect of music pedagogy on learner acquisition of creativity and critical thinking skills. The study was based on Vygotsky's Socio-cultural Theory of cognitive development and Bruner's Cognitive Development Theory. This study was carried out in public primary schools of

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Bungoma County, Kenya. Data was collected from teachers of Music, learners, head teachers, curriculum support officers and the Kenya Institute of Curriculum Development official for a period of one month. The respondents were 300 Grade Four learners, 20 music teachers of Grade Four, 20 head teachers, 2 Curriculum Support Officers and 1 Kenya Institute of Curriculum Development (KICD) official. The instruments of data collection employed were questionnaires, interview schedules and observation guides. Research findings indicate that most activities intended to promote creativity and critical thinking have not been introduced to learners. However, the real situation was revealed through observation. It was observed that 18 % of female learners and 17% of male learners made percussions, while 14% of female learners and 23% of male learners created rhythmic patterns using percussions. The use of Descant Recorders has a significant positive impact ($\beta=0.652$, $P\text{-value}=0.000$) at $p\text{-value} < 0.05$ on the learner acquisition of 21st century skills. Through observation, the researcher saw the real state of learners. It is therefore evident that learners had not been exposed to most activities which promote creativity and critical thinking. This study is expected to help teachers gauge their levels of preparedness in handling music and the Ministry of Education in the training of teachers of Music. Its findings may also guide the KICD to produce relevant music materials, course books for music and appropriate music curriculum design.

Keywords: Music pedagogy; creativity; critical thinking; competencies; competency-based curriculum.

1. INTRODUCTION

The world in which today's learners graduate into is quite different from that of yesteryears. 21st Century learners are confronted with complex and numerous challenges- social, cultural, economic and technological. For this reason, education must prepare learners who possess sophisticated, diversified and complementary competencies that will enable them to navigate through these challenges (Teacher Service Commission, 2019). Every teacher must be equipped with a wide range of skills, that is, content knowledge and practical skills to prepare learners to succeed in work and life in a global economy (TSC, 2019). Evidence shows that appropriate investments in education and training are a catalyst for socioeconomic development in many countries (Riechi, 2021).

Curriculum is a foundation of educational reforms and framework that is aimed at achieving high-quality learning outcomes through a conscious and systematic selection of knowledge, skills and values (Gichuru et al., 2021). CBC is divided into three levels, which are: Early Years Education, Middle School Education and Senior School. The CBC is a 2:6:6:3 system of education where the learner spends 2 years at pre-primary level, 6 years at primary level, 6 years at secondary level and at least 3 years at university level. Kenya is in the process of implementing a new curriculum, themed Competency-based Curriculum (CBC). Buoyed by benefits accrued from education, such as promotion of individual wellbeing and acquisition of skills and capabilities to contribute meaningfully to the economy and society at

large, the Kenyan government continues to invest heavily in education (Akala, 2021; Kubai, 2023). The CBC under the 2-6-6-3 system of education in Kenya was unveiled in 2017 to replace the 8-4-4 system of education, which served Kenya for 32 years. CBC is where learning is based on the needs and potential of individual learners under a flexible framework and parameters that move and shift according to the learners' demands. CBC is collective learning in which the learner and instructor are partners in the learning process as they jointly seek answers and solutions to simple and complex learning expectations useful to humans (Patil et al., 2016). CBC promotes hands-on training and infuses acquisition of new knowledge through observation, learning as you do, experiential learning and practical experimenting in order to become better at each succeeding stage. In CBC, exams are not necessary, but competency is measured by several methods in order to ascertain that the learner is mastering content or getting better at what they are doing (KICD, 2017).

Education systems in Kenya have been influenced by reports of commissions, working committees and task forces that made proposals for revamping and or altering them altogether (Okal, 2022; Bailey, 2023). Music is one of the subjects reintroduced in the primary school curriculum under CBC. According to KICD (2017), content in Grade Four is organised in three broad strands which are: Performing, creating and composing and listening, responding and appreciation. Under performance, the learner is to be exposed to

singing and playing of instruments. Singing at grade four is for the purposes of learning performance skills, roles of music in different occasions, practical mastery of music elements and theme or message. On instruments, the learner is supposed to play the descant recorder. The descant recorder is a wind instrument played by blowing. Concepts to be covered are: Parts of a recorder, assembling a recorder, finger numbers, holding (posture), how to cover the holes, blowing and fingering to play notes G, A and B. In addition, pupils should be taught to play tunes built on notes G, A and B.

Proper teaching of the three strands is expected to guide learners to acquire creativity and critical thinking skills. Activities intended to promote creativity and critical thinking of Grade Four learners are: Singing melodies based on d, r, m, creating melodies based on d, r, m, interpreting hand signs for d, r, m, creating rhythmic patterns, recording performances, composing tunes on descant recorder using notes B, A, G, discussing different elements of live or recorded music, and making percussions. However, learners are not exposed to all these activities because teachers teaching them underwent 8:4:4 training, which was mainly theoretical. This study assessed the influence of music pedagogy on learner acquisition of creativity and critical thinking skills.

2. METHODOLOGY

Data was collected from teachers of Music, learners, head teachers, curriculum support officers and the Kenya Institute of Curriculum Development official for a period of one month.

2.1 Participants

Participants in this study were 20 Grade Four Music teachers, 300 Grade Four learners, 20 head teachers of public primary schools, 2 curriculum Support officers and 1 KICD official.

2.2 Data Collection

The researcher visited each sampled school and did a formal introduction. Instruments for data collection were questionnaires, interview schedules and observation guides. Questionnaires were filled out by teachers and were collected on the same day. As the filling of the questionnaire by the teacher of music was ongoing, the researcher was conducting an interview with the school head teacher. After dealing with the teacher of Music and the head

teacher, sampled learners were observed performing activities that promote creativity and critical thinking (Bruner, 1966). These activities were: Singing melodies based on d, r, m, creating melodies based on d, r, m, interpreting hand signs for d, r, m, creating rhythmic patterns, recording performances, composing tunes on descant recorder using notes B, A, G, discussing different elements of live or recorded music, and making percussions (Vygotsky, 1978). A telephone interview was conducted with one Curriculum Support officer and a Kenya Institute of Curriculum Development official. The other Curriculum Support Officer was interviewed at the researcher's place of work.

3. RESULTS AND DISCUSSION

3.1 Data Analysis

The analysis of data was done as per the objective. The descriptive statistics were frequencies and percentages (Bhandari, 2020). Coding of data was done, and data sheets were created. Data was then reduced to frequencies and percentages using manual computation, a scientific calculator and SPSS. According to Yadetta and Ngau (2004), SPSS is a reliable statistical package for data storage, manipulation, analysis and reporting. Presentation of data was done using frequency tables and pie charts (McCombes, 2019). As for inferential statistics, regression analysis was used. This was done with guidance from Information and Communication Technology (ICT) experts. After interpretation of data, conclusions and inferences were made based on the research objective.

As revealed in Table 1 and Fig. 1, 25 (8%) female learners and 18 (6%) male learners managed to sing melodies based on d,r,m, while 125 (42%) females and 132 (44%) did not. On the other hand, from Table 2 and Fig. 2, 31 (10%) females and 6 (2%) males managed to create melodies based on d,r,m, while 119 (40%) and 144 (48%) did not. It is evident that most learners are not exposed to solfege, which is an integral part that forms the basis of composition. This finding concurs with the findings of Mochere (2016). The theoretical training undergone by most teachers makes them uncomfortable handling technical bits of music like solfege. Some of the challenges faced by teachers in teaching music are caused by inadequate pre-service training (Mochere, 2016).

Table 1. Singing melodies based on d, r, m

Response	Sex	Frequency	Per cent
Yes	Female	25	8.0
Yes	Male	18	6.0
No	Female	125	42.0
No	Male	132	44.0
Total		300	100.0

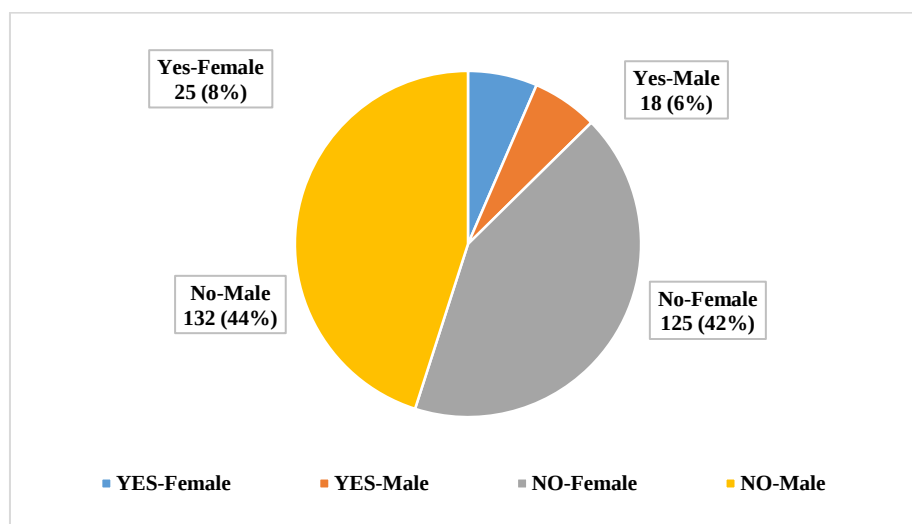


Fig. 1. Singing melodies based on d, r, m

Table 2. Creating melodies based on d, r, m

Response	Sex	Frequency	Per cent
Yes	Female	31	10.0
Yes	Male	6	2.0
No	Female	119	40.0
No	Male	144	48.0
Total		300	100.0

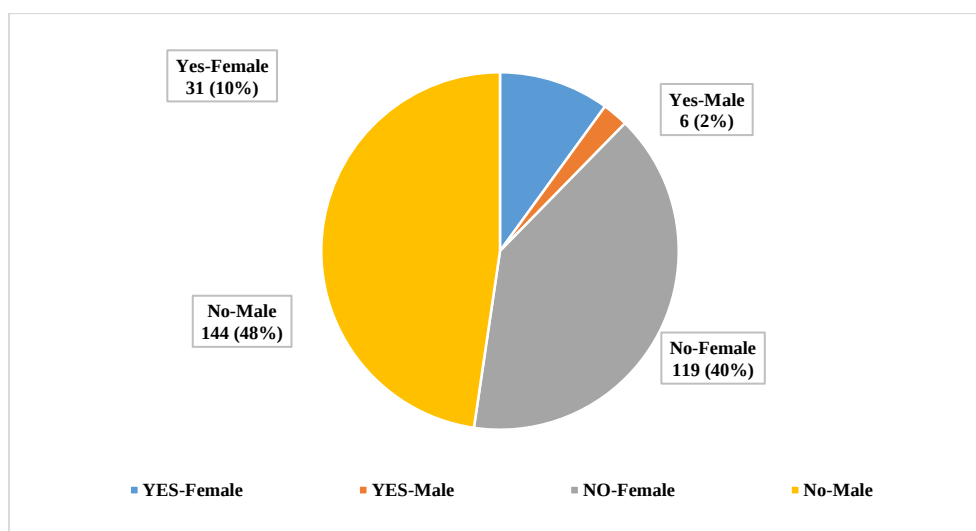


Fig. 2. Creating melodies based on d, r, m

Table 3. Singing melodies based on d, r, m (response of teachers and head teachers)

Response	Frequency	Percent
Yes	12	30.0
No	28	70.0
Total	40	100.0

Table 4. Creating melodies based on d, r, m (response of teachers and head teachers)

Response	Frequency	Percent
Yes	6	15.0
No	34	85.0
Total	40	100.0

Table 5. Interpreting hand signs for d, r, m

Response	Sex	Frequency	Percent
Yes	Female	19	6.0
Yes	Male	14	5.0
No	Female	131	44.0
No	Male	136	45.0
Total		300	100.0

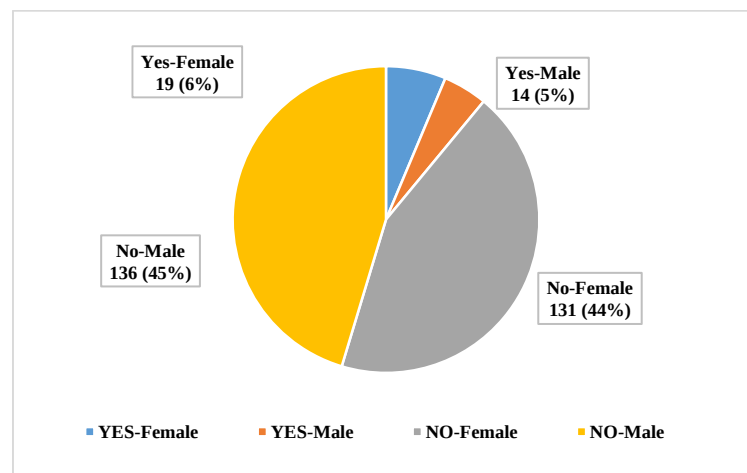


Fig. 3. Interpreting Hand Signs for d, r, m

Table 6. Interpreting hand signs for d, r, m (response of teachers and head teachers)

Response	Frequency	Percent
Yes	5	12.5
No	35	87.5
Total	40	100.0

Table 7. Creating rhythmic patterns

Response	Sex	Frequency	Percent
Yes	Female	42	14.0
Yes	Male	70	23.0
No	Female	108	36.0
No	Male	80	27.0
Total		Total	100.0

Results in Table 5 and Fig. 3 show that 19 (6%) female learners and 14 (5%) male learners managed to interpret hand signs for d, r, m, while 131 (44%) females and 136 (45%) males did not do so. Only 5 (12.5%) of the teachers and head teachers interviewed said that they had exposed their pupils to hand signs as shown in Table 6. Hand signs are one of the technical areas of music pedagogy which require proper training. In agreement with this finding, Mochere (2016) cited inadequate pre-service training of teachers as one of the factors that hinders proper dissemination of knowledge to learners.

From Table 7 and Fig. 4, 42 (14%) female learners and 70 (23%) male learners were able to create rhythmic patterns, while 108 (36%) females and 80 (27%) males were not able to do so. Table 8 reveals that 23 (57.5%) of teachers and head teachers reported that they had exposed their learners to the creation of rhythmic patterns. However, the real situation was

revealed through observation. Anwer (2019) observes that activity-based learning develops motivation and improves the academics of students and that in order to develop higher-order thinking skills, it is important to conduct lessons using activity-based learning.

From Table 9 and Fig. 5, of the 300 learners who were observed, 12 (4%) female learners and 6 (2%) male learners were able to record performances, while 138 (46%) females and 144 (48%) were not able to. This finding means that most Grade Four learners are not exposed to the recording of music performances. As much as 19 (47.5%) of teachers and head teachers who gave their responses said their pupils were able to record performances, as shown in Table 10, the real situation on the ground was quite different. According to Cavalier (2006), teachers should use tools of music technology to expand their knowledge and that of their learners.

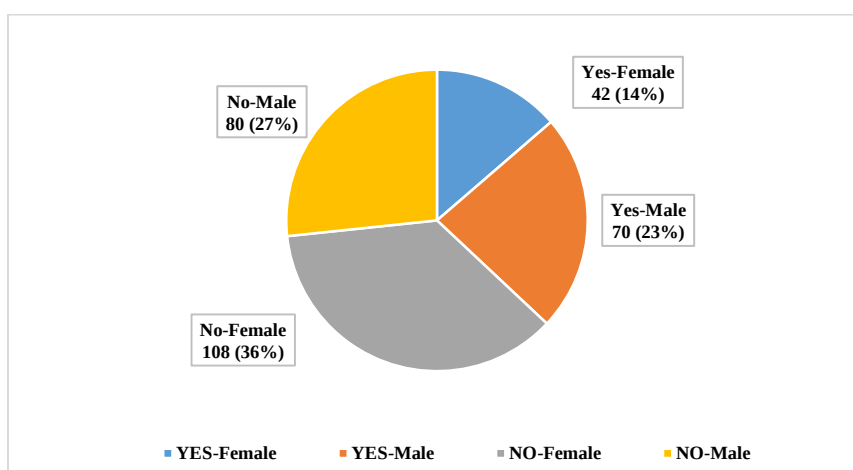


Fig. 4. Creating rhythmic patterns

Table 8. Creating rhythmic patterns (response of teachers and head teachers)

Response	Frequency	Percent
Yes	23	57.5
No	17	42.5
Total	40	100.0

Table 9. Recording performances

Response	Sex	Frequency	Percent
Yes	Female	12	4.0
Yes	Male	6	2.0
No	Female	138	46.0
No	Male	144	48.0
Total		300	100.0

Table 10. Recording performances (response of teachers and head teachers)

Response	Frequency	Percent
Yes	19	47.5
No	21	52.5
Total	40	100.0

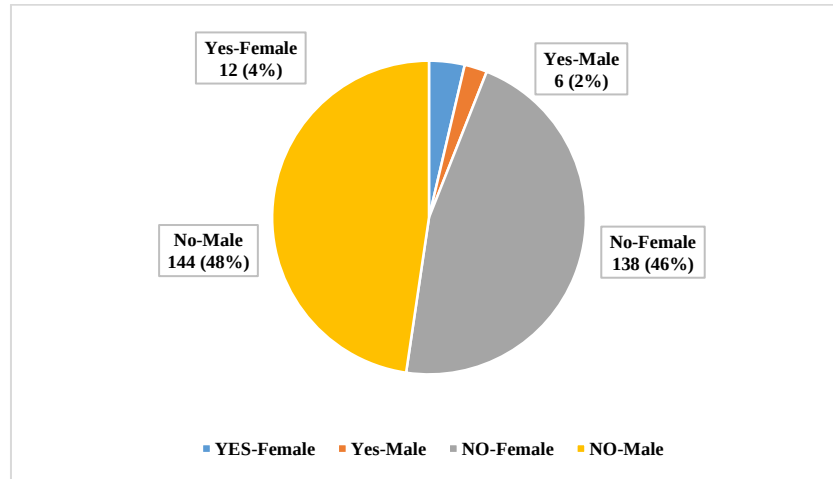


Fig. 5. Recording performances

Table 11. Composing tunes on descant recorder using notes B, A, G

Response	Sex	Frequency	Percent
Yes	Female	0	0.0
Yes	Male	0	0.0
No	Female	150	50.0
No	Male	150	50.0
Total		300	100.0

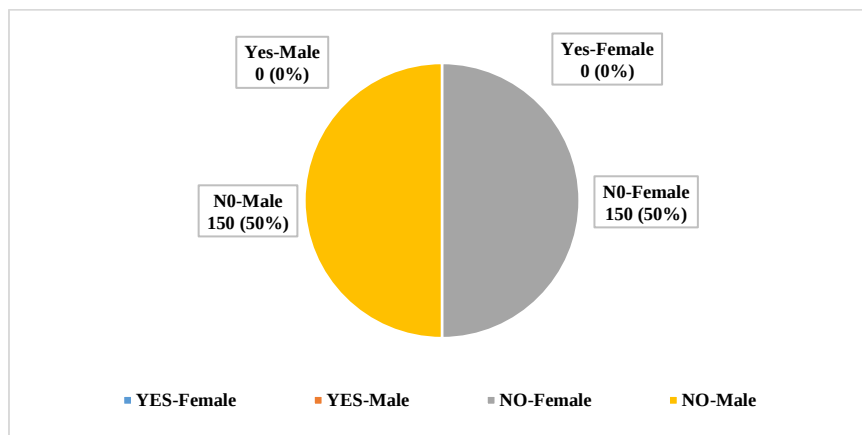


Fig. 6. Composing tunes on descant recorder using notes B, A, G

Table 12. Composing on descant recorder using notes B, A, G (teachers/head teachers)

Response	Frequency	Percent
Yes	0	0.0
No	40	100.0
Total	40	100.0

From Table 11 and Fig. 6, it is revealed that 0 (0%) female learners and 0 (0%) male learners were able to compose tunes on descant recorder using notes B, A and G. All 150 (50%) females and 150 (50%) males were not able to do so. All the teachers and head teachers who gave responses said their learners were not able to compose tunes on descant recorder using notes B, A and G as shown in Table 12. This is contrary to the views of Estrella (2008). Estrella contents on teaching children music that engages their mind and body through a mixture of singing, dancing, acting and playing of instruments.

Table 13 and Fig. 7 show that all 150 (50%) female learners and all 150 (50%) male learners

were not able to discuss different elements of live or recorded music. This is contrary to the view of Sawyer (2008), who asserts that one way to develop creativity in the classroom is to enable collaborative knowledge creation. Participation in music groups promotes friendship with like-minded people, self-confidence, social skills, social networking, a sense of belonging, teamwork, self-discipline, a sense of accomplishment, cooperation, responsibility, commitment, mutual support, mutual bonding to meet group goals, increased concentration and provides an outlet for relaxation. 27 (67.5%) of teachers and head teachers gave misleading information by reporting that their pupils were able to discuss different elements of music.

Table 13. Discussing different elements of live or recorded music

Response	Sex	Frequency	Percent
Yes	Female	0	0.0
Yes	Male	0	0.0
No	Female	150	50.0
No	Male	150	50.0
Total		300	100.0

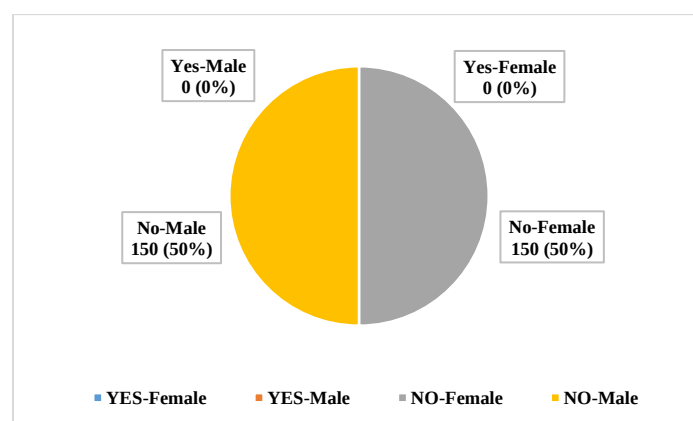


Fig. 7. Discussing different elements of live or recorded music

Table 14. Discussing elements of live or recorded music (teachers and head teachers)

Response	Frequency	Percent
Yes	27	67.5
No	13	32.5
Total	40	100.0

Table 15. Making percussive instruments

Response	Sex	Frequency	Percent
Yes	Female	54	18.0
Yes	Male	51	17.0
No	Female	96	32.0
No	Male	99	33.0
Total		300	100.0

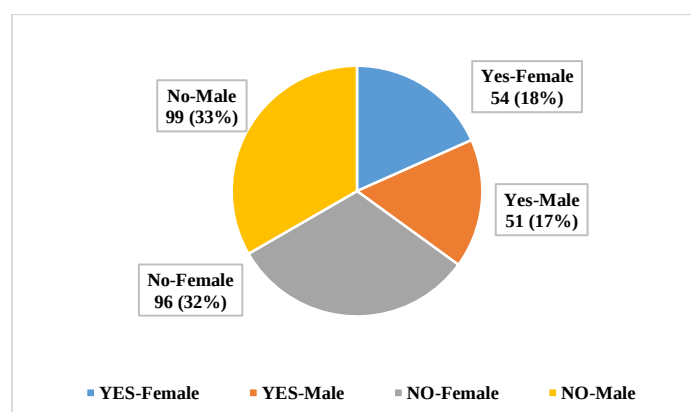


Fig. 8. Making percussive instruments

Table 16. Making percussive instruments (response of teachers and head teachers)

Response	Frequency	Percent
Yes	32	80.0
No	8	20.0
Total	40	100.0

Table 17. Regression of Kodaly method through the use of descant recorders against creativity and critical thinking as a variable of learner acquisition of 21st century skills

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Use of Descant Recorders ^b	.	Enter

a. Dependent Variable: Learner Acquisition of 21st Century Skills

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.659 ^a	.434	.432	.370

a. Predictors: (Constant), Use of Descant Recorders

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	31.276	1	31.276	228.864	.000 ^b
	Residual	40.724	298	.137		
	Total	72.000	299			

a. Dependent Variable: Learner Acquisition of 21st Century Skills

b. Predictors: (Constant), Use of Descant Recorders

Coefficients ^a							
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.	95.0% Confidence Interval for B	
		B	Std. Error			Lower Bound	Upper Bound
1	(Constant)	.579	.071		8.184	.440	.718
	Use of Descant Recorders	.652	.043	.659	15.128	.567	.736

a. Dependent Variable: Learner Acquisition of 21st Century Skills

Results in Table 15 and Fig. 8 reveal that 54 (18%) female learners and 51 (17%) male learners were able to make percussive instruments, while 96 (32%) females and 99 (33%) males were not able to. 32 (80 %) of

teachers and head teachers who gave responses reported that their pupils were able to make percussive instruments, as shown in Table 16. Learners ought to be engaged in music activities such as making percussive instruments. This

promotes creativity in learners. Blethers (2010) observes that music stimulates the whole brain and is multisensory, fun and engaging.

3.2 Music Pedagogy

There are four pedagogies in Music (Estrella, 2008). The Orff pedagogy has activities such as singing, acting, the use of percussion, dancing, poetry and storytelling. The activities of Kodaly pedagogy are singing, playing rhythms, sight-reading, hand signs, and solfege. Activities in Suzuki pedagogy are listening to music, repetition of heard music, memorisation of music and building of music vocabulary. In Dalcroze pedagogy, learners are exposed to activities such as listening to music, ear training, eurhythmics, solfege and improvisation. This study sought to assess the influence of music pedagogy on learner acquisition of creativity and critical thinking skills

3.3 Effect of Music Pedagogy on Learner Acquisition of Creativity and Critical Thinking Skills

From Table 17, Use of Descant Recorders has a positive significant impact ($\beta=0.652$, $P\text{-value}=0.000$) at $p\text{-value} < 0.05$ on the learner acquisition of 21st century skills, which implies that use of Descant Recorders would continue to be a driver of learner acquisition of 21st century skills. Instruments form an integral part of music. They can be played to accompany a piece of music, in an ensemble with other instruments or as solo instruments. This is supported by Kibici (2022), who argues that exposing learners to instrument playing leads to a positive attitude towards learning and increases their creativity. Also, according to Kapur (2019), in activity-based learning, learners have active participation in learning activities. Educators generate awareness among learners that if they participate in activities, they will be able to augment their learning in an efficacious manner. Students become experienced and are able to acquire an efficient understanding of the concepts. Activity-based learning is promoted through the organisation of tasks, activities and projects. According to Patil (2016), activity-based teaching and learning is an effort to overcome the limitations of the traditional mode of course delivery, that is, monotonous lecturing and the absence of activities. In activity-based teaching and learning, different activities are designed and practised along with classroom teaching. The active learning provides more opportunities to learn beyond the classroom teaching. The

effectiveness of these activities is assessed through academic performance.

4. CONCLUSION

Through observation, the researcher saw the real state of learners. The activities that were intended to build creativity and critical thinking in learners were singing melodies based on d, r, m, creating melodies based on d, r, m, interpreting hand signs for d, r, m, creating rhythmic patterns, recording performances, composing tunes on descant recorder using notes B, A, G, discussing different elements of live or recorded music, and making percussions. Of these activities, 18 % of female learners and 17% of male learners made percussions, while 14% of female learners and 23% of male learners created rhythmic patterns using percussions. The performance in the rest of the activities was dismal. It is therefore evident that learners had not been exposed to most activities which promote creativity and critical thinking.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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