INFLUENCE OF ONLINE MUSIC EDUCATION ON ACADEMIC PERFORMANCE OF MUSIC STUDENTS IN SELECTED PRIVATE SECONDARY SCHOOLS IN NAIROBI COUNTY, KENYA

KEVIN KIANDA MWITA

A Thesis Submitted to the Institute of Postgraduate Studies of Kabarak University in Partial Fulfillment of the Requirements for the Award of Master of Music Education Degree

KABARAK UNIVERSITY

NOVEMBER, 2025

DECLARATION

1. I do hereby declare that:

   i. This thesis is my own work, and to the best of my knowledge, it has not been presented for the award of a degree in any university or college.

   ii. That the work has not incorporated material from other works or a paraphrase of such material without due and appropriate acknowledgement

   iii. The work has been subjected to processes of anti-plagiarism and has met Kabarak University's 15% similarity index threshold.

2. I do understand that issues of academic integrity are paramount, and therefore, I may be suspended or expelled from the University, or my degree may be recalled for academic dishonesty or any other related academic malpractices.

Signed:_____ Date:_____

Kevin Kianda Mwita

GME/M/2766/09/18

RECOMMENDATION

To the Institute of Postgraduate Studies:

The thesis entitled **'Influence of Online Music Education on Academic Performance of Music Students in Selected Private Secondary Schools in Nairobi County, Kenya',** and written by **Kevin Kianda Mwita** is presented to the Institute of Postgraduate Studies of Kabarak University. We have reviewed the research thesis and recommend that it be accepted in partial fulfillment of the requirement of Master of Music Education.

Signed:_____ Date:_____

Dr. Ruth Owino

Department of Music and Performing Arts

Kabarak University

Signed:_____ Date:_____

Dr. Ernest Patrick Monte

Department of Music and Performing Arts

Kabarak University

COPYRIGHT

ACKNOWLEDGEMENT

Above all, I thank God Almighty for His faithful providence throughout this study process. His grace and mercy have sustained me.

I want to express my appreciation to Kabarak University and the School of Music and Media for the quality of the learning and education they have provided me. It has been a very rewarding learning experience being a member of the institution; my academic, professional, and personal skills and abilities have been refined.

My lecturers and mentors have played a significant role in developing my thesis. Prof. Mellitus Wanyama, Dr. Ruth Owino, and Dr. Ernest Monte spent hours, days, and months to make sure that my concepts and ideas were ready for presentation.

My supervisors, Dr. Ruth Owino and Dr. Ernest Monte, were instrumental in the success of this thesis study. They committed their time and energy to mentoring and advising me so that I could improve, develop, and complete this work. I am forever grateful to my supervisors.

I tremendously appreciate, honor, and value my family members for being a part of my academic journey. My mother, Prof. Miriam Mwita, and my siblings, Dr. Chacha Mwita, Charles Mwita, and Dr. Jefferson Mwita, were constant sources of moral, academic, and social support. My aunt, Dr. Immaculate Marwa, and my uncle, Dr. Ssemakula Maroa, have been great advisers on this journey. Without them all, I would not have been this successful.

DEDICATION

I dedicate this study to my parents, Prof. Miriam Mwita, and my late father, Dr. Joseph Mwita. They have been models to me, sources of inspiration, and above all, what it means to trust God, persevere, and carry on.

ABSTRACT

The need for online music education in Kenya has remained a priority, especially after the COVID-19 pandemic. Although the possibility of virtual education became widespread during COVID-19, Online education programs have existed in Kenya for some time at varying levels of use. With the integration of online music education into existing classroom learning, it is essential to identify the opportunities and challenges. Guided by Lewin's change management model and Kotter's 8-step change model, this study examined how online music education influenced academic performance amid the integration of the virtual classroom into the physical mode of instruction. Given the significant shift away from physical instruction for music learners in private secondary schools in Nairobi County, Kenya, it is important to understand how these changes are influencing music education. This study examined how online music learning influences student engagement in selected private secondary schools in Nairobi County, Kenya; how online music learning affects the practical skills development of private secondary students in Nairobi County, Kenya; how students' attitudes towards online music education affects academic performance in selected private secondary schools in Nairobi County, Kenya; and how teachers' capabilities in online music education and instruction affect students' academic performance in music education in selected private secondary schools in Nairobi County, Kenya. The exploratory research design was employed in the study. The study was conducted in Nairobi County. The sample population was drawn from teachers and students in selected private secondary schools. Qualitative data were collected from teachers and students in private schools within Nairobi County through interviews. Open-ended interviews with relevant respondents were used to collect data. A pre-test was conducted to assess the credibility and dependability of the research instruments. The data were analyzed before being presented in the findings. This study aimed to determine the influence of online music education on students' learning outcomes, skillfulness, and academic achievement in private secondary schools in Nairobi County, Kenya. The outcomes indicated that students gained enhanced benefits in terms of active participation and creativity but faced challenges in acquiring practical skills. The study proposals are: the use of both traditional classroom education and online learning models; studies on the long-term effects of such pedagogy; and the examination of the effectiveness of newer technologies in the teaching of music to improve learning experiences among learners.

Keywords: *Online Music Education, Practical Music Skills, Academic Performance.*

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

CBC - Competency-Based Curriculum

COVID-19 - Coronavirus Disease of 2019

ICT - Information and Communication Technology

NACOSTI - National Commission for Science, Technology, andInnovation

NCRP - National Curriculum Reviews Policy

OME - Online Music Education

WHO - World Health Organization

CONCEPTUAL AND OPERATIONAL DEFINITION OF TERMS

Academic Performance: Students' achievement in music learning based on practical outcomes, assessment scores, and general music skills.

Attitude: A way in which someone evaluates, views, or perceives something. In this case, it will be used to refer to how students or teachers view or perceive online music education and how that affects the academic performance of music students.

Challenges: The difficulties and obstacles experienced by music teachers and students in the process of teaching and learning music.

Influence: To affect, change, or have an effect upon another by indirect or intangible means. In this study, it will refer to the effect of online music education on the academic performance of music students.

Music Education: In this study, it refers to the process of teaching and learning music.

Online Music Education: The process of teaching and learning music in virtual classrooms by means of electronic devices and the internet. The study considers the influence of online music education on the academic performance of music students.

Post COVID-19: The period after the onset of COVID-19 during which institutions, organizations, and learning activities shifted online.

Practical Music Skills: Skills involving the actual performance or use of music, e.g., playing a musical instrument, singing, aural performance.

Virtual Classroom: An online teaching and learning environment.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The COVID-19 pandemic introduced a new dimension to education delivery systems globally, including specialized content such as music. WHO characterized COVID-19 as a global health emergency in January 2020 and as a pandemic on 11 March 2020, which warranted measures such as social distancing, lockdowns, and travel restrictions (Cucinotta & Vanelli, 2020). The education systems globally were put under pressure as institutions closed to contain the spread of the virus, with social distancing reducing classroom learning. This shift, aimed at ensuring continuity in learning with a view to mitigating the spread of COVID-19, changed traditional modes of delivery and introduced new barriers, especially in sciences and arts that emphasize practical activities, group work, or performance-based learning, such as music education.

In Kenya, the pandemic escalated, and the government issued instructions to close learning institutions on 15 March 2020. Private secondary schools, especially those in urban areas like Nairobi County, were forced to adopt online learning tools to continue the learning process hastily. Since most private institutions in Nairobi receive better resources and infrastructure than public universities, they were set to consider online learning, though the practice has many complications (Akombo, 2022). These schools, which attract more revenue through higher fees, offer international curricula and some other specializations (Akombo, 2022). Nonetheless, the applicability of music education and skill development as a subject encountered challenges when implemented during online learning, as determined in this current study concerning music students' performance in Nairobi's private secondary schools.

According to the United Nations Report (2020), the COVID-19 impact affected 94% of roughly 1.6 billion learners worldwide, as many countries adopted virtual learning, also known as e-learning. For e-learning to take place, electricity, internet connectivity, and digital devices are required. Educators also need a virtual suite for designing learning materials, distributing them, monitoring classroom tasks, and returning them for assessment. Due to the health and safety challenges brought on by COVID-19, the Kenyan government ordered all schools to close on March 15, 2020. Private and urban schools had to work out the modalities of setting up systems and infrastructure that would allow learning to continue despite the closure of institutions.

As a result, schools and families faced difficulties in educating children and in handling COVID-19 challenges. Only an estimated 22% of learners in Kenya had access to technological learning tools and resources, and an even smaller percentage managed to access government-issued learning programs during the pandemic (Uwezo, 2020). As the pandemic progressed, education stakeholders worked to deliver the school curriculum through alternative means.

During the pandemic in Kenya, music educators in Nairobi County and across the country faced several challenges: decreased music student attendance, decreased teacher motivation, digital illiteracy, quality of online education, increased expenditure, and reduced income (Akombo, 2022). Student attendance decreased due to the inability to access reliable internet for virtual lessons. Teachers' motivation was linked to challenges in adapting to or managing technology, reduced income from salary cuts, and students' behaviour and motivation. Expenditure increased because teachers had to purchase internet access and musical instruments for their lessons. One benefit of the pandemic was the flexibility of lessons, which enabled remote learning from any location and at any time that was convenient.

After the pandemic, some of the teaching methodologies that were used during COVID-19 continued to be adopted in educational institutions across the world. In a study by Agarwal et al. (2021), a majority of students surveyed stated they were willing to continue online classes even after the COVID-19 pandemic ended. Institutions of higher learning across Kenya and the world have developed programs that adopt technology for online learning, necessitating digital skills training for students and staff. Social interactions, the quality of communication, and support for pedagogical approaches are among the unique challenges schools and institutions need to consider to create an inclusive online learning environment that caters to the needs of a variety of students (O'Dea & Stern, 2022).

The COVID-19 pandemic brought about an unprecedented situation in music education across Nairobi and Kenya. Schools had to address new issues, including changes in content delivery and music-teaching practice, the shift to online education, and how to implement group performance activities. However, the COVID-19 pandemic brought additional challenges to institutions already grappling with limited resources, music education syllabi, and teaching methodologies. Challenges experienced in music education during the COVID-19 pandemic in Kenya are therefore a key motivator of this study.

Overall, the music curriculum for secondary schools is structured into four classes, from form one to form four, over three terms per year of study. The content is structured from basic skills to complex music concepts. The outline of the context from forms one to four for the music curriculum is documented in the tables below:

Table 1

Music Content for Form One Music Curriculum

Classes/ Content		Western Music			African Music			Popular Music
FORM 1		Themes	Content	Examined Content	Themes	Content	Examined Content	Content
	TERM 1	Basic skills	EM, MN	✔	History of African music	CAM	✔	✖
		History	MD	✔	Analysis of African music	-	✖	✖
		Practical/ Aural	-	✖	Practical	-	✖	✖
	TERM 2	Basic skills	TR, SC,	✔	History of African music	OAM	✔	✖
		History	B	✔	Analysis of African music	-	✖	✖
		Practical/ Aural	-		Practical	-	✖	✖
	TERM 3	Basic skills	M4	✔	History of African music	CAM, OAM	✔	✖
		History	RN	✔	Analysis of African music	-	✖	✖
		Practical/ Aural	-	✖	Practical	-	✖	✖

Source: Adhiambo, (2021)

Table 2

Music Content for Form Two Music Curriculum

Class		Western Music			African Music			Popular Music
Form 3		Themes	Content	Examined Content	Themes	Content	Examined Content	Content
	TERM 1	Basic skills	M12	✔	History of African music	AD	✔	✖
		History	C	✔	Analysis of African music	APW	✔	✖
		Practical/ Aural	PWP	✔	Practical	AFS/D	✔	-✖
	TERM 2	Basic skills	M12	✔	History of African music	AD, CAM, OAI	✔	✖
		History	RP	✔	Analysis of African music	APW		✖
		Practical/ Aural	PWP	✔	Practical	AFS/D	✔	✖
	TERM 3	Basic skills	M16	✔	History of African music	AD, CAM, OAI	✔	✖
		History	M, RN, B, C, RP	✔	Analysis of African music	APW	✔	✖
		Practical/ Aural	PWP	✔	Practical	AFS/D	✔	✖

Source: (Adhiambo, 2021).

Table 3

Music Content for Form Three Music Curriculum

Class		Western Music			African Music			Popular music
Form 4		Themes	Content	Examined Content	Themes	Content	Examined Content	Content
	TERM 1	Basic skills	M16	✔	History of African music	RAD	✔	✖
		History	20TH C	✔	Analysis of African music	APW	✔	✖
		Practical/ Aural	PWP,	✔	Practical	AFS/D	✔	✖
	TERM 2	Basic skills	MDL	✔	History of African music	RAD	✔	✖
		History	M, RN, B, C, RP	✔	Analysis of African music	APW	✔	✖
		Practical/ Aural	PWP	✔	Practical	AFS/D	✔	✖
	TERM 3	Basic skills	M16, M	✔	History of African music	RAD	✔	✖
		History	M, RN, B, C, RP	✔	Analysis of African music	APW	✔	✖
		Practical/ Aural	PWP	✔	Practical	AFS/D	✔	✖

Source: Adhiambo, (2021).

Table 4

Music Content for Form Four Music Curriculum

Class		Western Music			African Music			Popular music
Form 4		Themes	Content	Examined Content	Themes	Content	Examined Content	Content
	TERM 1	Basic skills	M16	✔	History of African music	RAD	✔	✖
		History	20TH C	✔	Analysis of African music	APW	✔	✖
		Practical/ Aural	PWP,	✔	Practical	AFS/D	✔	✖
	TERM 2	Basic skills	MDL	✔	History of African music	RAD	✔	✖
		History	M, RN, B, C, RP	✔	Analysis of African music	APW	✔	✖
		Practical/ Aural	PWP	✔	Practical	AFS/D	✔	✖
	TERM 3	Basic skills	M16, M	✔	History of African music	RAD	✔	✖
		History	M, RN, B, C, RP	✔	Analysis of African music	APW	✔	✖
		Practical/ Aural	PWP	✔	Practical	AFS/D	✔	✖

Source: (Adhiambo, 2021).

KEY

✓ - Content examined at the level ✕ - Content not examined at the level ⍾ - Content partially examined.

APW – African prescribed work
AD – African dances
AFS/D African folk songs or dances
AM – African music
A – Aural
20th C – 20th Century music
BR – Baroque music
C – Classical music
CAI – Classification of African instruments
CAM – Categories of African music
EM – Elements of music
H – Harmony
M4 – Melody of four bars
M8 - Melody of eight bars
M12- Melody of twelve bars
M16 - Melody of sixteen bars
MD – Medieval music
MDL – Modulation
MN – Musical Notes
OAM – Occasion of African music
TRI – Transposing instruments
PWP – Prescribed western pieces
RAD – Relationship between African music and dance
RP – Recorder practice
SC – Scales
TR – Transposition

Tables 1, 2, 3, and 4 shows the different music categories taught in the secondary school system in Kenya, mainly focusing on "Western classical music, African folk music, and popular music" (Adhiambo, 2021, p. 43). The curriculum is mainly divided into three: imparting basic knowledge and skills in music, analyzing the historical development of music, and the practical application of aural skills. The basic skills include time signatures, melody, and transposition.

The practical aspects of Western music may include the study of instruments and the aural aspects, such as listening to pitches, studying chords, melody, and rhythm. The students also study African music categories, analyse the music, and engage in practical sessions that may involve playing African music instruments. The study entails classifying the types of African music, the instruments used, their functions, and

performance roles. Other aspects of performance, such as dancing, languages used for music creation, and transcendence from one generation to the next. Popular music is mentioned only briefly, with little detail on its performance and execution.

Understanding the influence of online education on the performance of music students in select private schools can provide stakeholders in education with essential information. This study investigated the influence of online learning on the academic performance of music students in Nairobi County schools, focusing on select private secondary schools. The post-COVID-19 era has seen an increase in the uptake of online learning across different private secondary schools. The study focused on private secondary schools, as the majority of schools adopted online learning platforms for music. The schools provided an avenue for data collection to provide insight into the research questions.

1.2 Statement of the Problem

Online learning created a new dynamic for both students and teachers. The COVID-19 pandemic influenced the adoption of online learning in most schools. Private secondary schools in Nairobi County, Kenya, created new platforms or enhanced existing ones to continue providing education to learners. Learners had to adopt a new way of learning with little preparation, which may have affected their performances and attitudes to learning. Teachers had to adapt to the new teaching approach and maintain the quality they provided through traditional learning methods. Online learning limits one-on-one in-person interactions, and teachers may therefore struggle to observe students and correct their mistakes.

Traditional teaching methods offer advantages for music teachers, as they enhance interactions and allow teachers to identify students who are struggling. These factors can positively influence students' academic performance. The introduction of online learning

may present a challenge or an opportunity for learning music. Therefore, it is necessary to establish how online learning complements the traditional face-to-face teaching and the outcome for student engagement and acquisition of practical music skills, to establish best practices that can guide online education in Nairobi County and Kenya by extension, from now on.

The motivation is to establish the influence and effectiveness of online music education, particularly how and whether it enables personal connection between teachers and students, and whether it ensures increased engagement, understanding, and skill acquisition in the absence of face-to-face expressions and non-verbal cues present in a physical learning environment. As a result, this study aimed at exploring how the use of online learning affected the academic performance of music students in select private secondary schools. The study explored how private secondary schools in Nairobi County, Kenya, addressed online music education.

1.3 Objectives of the Study

1.3.1 General Objective

i. To investigate the outcome of online music learning on the academic performance of music students in selected private secondary schools in Nairobi County, Kenya.

1.3.2 Specific Objectives

i. To establish how online music learning influences student engagement in selected private secondary schools in Nairobi County, Kenya.

ii. To examine how online music learning affects the practical skills development of private secondary school students in Nairobi County, Kenya

iii. To assess the influence of students' attitudes towards online music education on their academic performance in selected private secondary schools in Nairobi County, Kenya.

iv. To determine how teachers' capabilities in online music education and instruction affect students' academic performance in music education in selected private secondary schools in Nairobi County, Kenya.

1.4 Research Questions

The research questions are:

i. What is the influence of online music learning on student engagement in selected private secondary schools in Nairobi County, Kenya?

ii. How does online music learning affect the practical skills development of private secondary students in Nairobi County, Kenya?

iii. How do students' attitudes towards online music education affect their academic performance in selected private secondary schools in Nairobi County, Kenya?

iv. How do teachers' capabilities in online music education and instruction affect students' academic performance in music education in selected private secondary schools in Nairobi County, Kenya?

1.5 Significance of the Study

This study is significant for educators, curriculum developers, and policymakers, as it illuminates how online learning can be refined to better support students. Understanding these effects can guide the development of targeted strategies that strengthen online music education. For instance, the results may encourage the implementation of hybrid models, increased digital resources for practice, or even the inclusion of structured group activities online. Additionally, the Ministry of Education could leverage these insights

to develop policies that bridge the infrastructure gap in public schools, enabling a more uniform adoption of online learning strategies that can benefit all students across both public and private sectors.

Additionally, this research offers a significant contribution to policy formulation within Kenya's education sector. The Ministry of Education can utilize these findings to establish policies that address the infrastructural and resource gaps in public schools, ensuring a more equitable rollout of online music education. By understanding the successes and limitations observed in private secondary schools, where investment in digital infrastructure is more feasible, policymakers can identify scalable strategies and prioritize investments in public school systems. This could include targeted funding for digital tools, professional development programs for teachers, and the creation of standard guidelines for online music instruction that support consistent quality across public and private institutions alike.

1.6 Justification of the Study

COVID-19 shifted the paradigm of music learning and teaching in Kenya and, at the same time, brought new issues. These issues required innovative approaches from all the learners and teachers. The findings of this study enlighten music educators, students, and policymakers about the strengths and limitations of the current approach to online music education. This research provides actionable guidance for enhancing teaching methods and student engagement in virtual music education environments through examining what aspects of online learning have been effective and identifying where improvement is still needed. Specifically, music educators in Kenya will benefit from understanding the skills and digital competencies necessary to adapt to and excel in online platforms. Besides, it will empower them to create more interactive, practical, and engaging learning experiences that address the unique demands of music education.

For students, the study's findings underscore effective learning strategies in online music education. This knowledge can help the students navigate challenges in practical skills development, performance collaboration, and feedback integration in virtual settings. These insights can better prepare music students for a digital learning environment, fostering resilience and adaptability that will support their educational and professional development aspirations. Additionally, the study informs teacher-training programs by highlighting competencies essential for future educators and guiding the design of curricula that include digital pedagogical skills and practical techniques tailored to online music instruction.

The research aimed to inform effective online music education in Kenyan Secondary schools, as studied through the prism of private secondary schools in Nairobi County, Kenya, with reference to how the use of online modalities influences, or otherwise affects, the effectiveness of music education. Education in Kenya and globally has undergone a drastic transformation due to the COVID-19 pandemic, which forced schools to adopt online learning to ensure learning did not stop. Private schools were chosen for this study due to their unique position in terms of infrastructure and resource adaptability. Unlike public schools, private secondary schools in Nairobi County generally have more advanced technological infrastructure, financial resources, and flexibility in adopting online learning systems. These factors enabled them to transition to online music education relatively swiftly during the pandemic. However, despite these advantages, they still faced distinct challenges, especially in the context of music education, which often relies heavily on practical, hands-on learning and collaborative group activities.

The study examines how reduced in-person contact and limited time for practical music sessions have affected the learning experience and performance outcomes of music

students. The transition to online learning increased individualized learning and reduced group interactions, which may have influenced students' motivation, engagement, and development of practical skills. By exploring these dynamics, this study offers crucial insights for stakeholders seeking to enhance online learning environments in music education, highlighting specific areas where digital instruction may require additional support to ensure students achieve optimal performance levels.

1.7 Scope of the Study

The study was conducted in a selection of private secondary schools in Nairobi. County in Kenya that offer music education in their curricula. Nairobi County was selected because it is cosmopolitan and represents schools across the country. These schools cut across various socio-economic backgrounds and personal experiences. The study sought to include private secondary schools because they have robust implementation frameworks for alternative studies to the mainstream curriculum, compared to public secondary schools.

Nairobi County has a balanced mix of private secondary schools, including County, Extra-County, and National schools. It also serves as an investment hub with a number of private institutions, thereby providing a sufficient representative sample for the present study. The researcher identified 50 private schools for data collection about online music education using an exploratory study design. The study focused on online music education and student engagement, practical skills development, creative music performance, and teachers' capacity to influence academic performance. The respondents were teachers instructing music education in selected private secondary schools and students drawn from forms one to four in a random sample.

1.8 Limitations and Delimitations of the Study

One limitation of the study is that it focuses only on private secondary schools in Nairobi County, Kenya. Besides, the study did not include public secondary schools because they lacked or did not integrate online teaching and learning in music. The discussions and findings of the research, however, may extend to public schools, as they generally offer similar curricula. Secondly, the exclusion of public schools could limit the study's general relevance. It should also be noted that the conditions of online music education may differ greatly depending on whether the student resides in an urban or rural environment, which this work does not discuss. These limitations indicate that it would be useful in the future to expand the number of participants, for instance, by including public schools or schools in rural regions.

One limitation is that the research focused on the influence of online education on the performance of music students and is therefore specific to online music education. Hence, the study's results can be analyzed only in the specific context of online music education in private secondary schools. Additionally, the study was centered on Nairobi County despite the existence of 46 other counties in Kenya. Other counties may provide different dynamics, which could alter the findings.

1.9 Assumptions of the Study

The research aims to investigate the influence of online education on the performance of music students in selected private secondary schools. The research assumes that adopting online education affects students' musical performance. For this reason, the researcher intended to identify the influence of the independent variables on the dependent variable. The study also assumed that students' and teachers' attitudes toward online education affect students' music performance.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Teaching and learning conditions have changed dramatically during and after the COVID-19 period compared to pre-COVID-19 times. Mostly, educators have held on to the online learning mode popularized during the lockdown period, when physical learning was almost impossible (Pozo et al., 2022). The policy shifts have been especially evident in the music education sector, for example, in the way orchestra and ensemble performances are conducted within open classroom spaces (Williams, 2021; Rosset et al., 2021). Some authors hold the view that COVID-19 has negatively affected learning processes, while others believe it has caused a paradigm shift for posterity.

The struggle between the two sides reveals interesting research gaps that this study seeks to address using online music education studies as a case study.

This chapter reviews previous studies, discussing comparisons and contrasts among scholars and experts in education. The focus of the section is to unravel research on the music education sector during the COVID-19 pandemic, the challenges education programmes encountered, the opportunities arising for teaching and learning, and the corresponding circumstances in the post-lockdown period. After reviewing the existing literature on the topic, the study identifies research gaps and presents a conceptual framework that maps the research concepts and their applications.

2.2 Education Sector after the Onset of COVID-19

While online learning became the focus after the onset of COVID-19, researchers have not reached a consensus on whether to embrace a complete shift from offline to online, adopt mixed learning methods, or maintain conventional in-class teaching methodologies. Some researchers indicate that online learning was the ultimate

solution to learning disruptions during COVID-19. For example, Adarkwah (2021) argues that online learning became the solution to continued teaching and instruction during the pandemic because COVID-19 disrupted social life, leading to the suspension of normal curriculum schedules across all education levels globally.

Since the onset of COVID-19, online learning has become a global focal point. Yet, research remains inconclusive on the best approach, with debate over a full shift to online learning, a blended model, or a return to traditional in-class methods. Many scholars contend that online learning provided an effective solution to the pandemic-induced disruptions in education. Adarkwah (2021) argues that online education allowed for continuity when in-person instruction was no longer viable due to widespread curriculum suspensions and restrictions on social gatherings. However, Adarkwah also highlights key challenges, particularly in developing countries, where limited ICT infrastructure, a shortage of technological devices, and low levels of digital literacy hinder the transition to online learning. Similarly, Xie et al. (2020) frame COVID-19 as a catalyst for innovation in educational methodologies, positing that online learning offers unmatched flexibility and accessibility. Yet, even as they underscore these benefits, the study acknowledges that infrastructure gaps in less-developed regions undermine the widespread adoption of online education.

Contrary to the optimism about online learning, other studies support a blended approach. Wang and Qing (2023) suggest that a blend of online and offline teaching methods enhances student engagement and performance by providing flexible learning structures that accommodate diverse learning styles while maintaining elements of in-person interaction. This approach has been adopted in various countries facing unique pandemic-related educational challenges. In Indonesia, for example, institutions developed a Learning Management System (LMS) to support college students, yet

Cahaya et al. (2022) observe that reliance on mobile phones over computers and less effective platforms like WhatsApp limited the system's effectiveness. The above observations underscore the inconsistent quality of online learning, especially in regions where resources remain scarce.

Nigeria's response to school closures mirrors similar challenges; Yusuff et al. (2022) emphasize that the efficacy of online learning in Nigeria's tertiary institutions depends heavily on the quality of infrastructure, user familiarity with e-learning systems, and efficient communication channels. These elements are often underdeveloped, resulting in variability in educational quality. Australia faced a different issue, with Feifei et al. (2022) documenting the negative effects of decreased international student enrollment on universities. Although e-learning was widely implemented, limited physical interaction diminished teaching quality and instructional effectiveness. This study further highlights the broad challenge of sustaining high-quality education solely through online formats.

Across contexts, these studies reveal common obstacles to transitioning to online learning: limited technological infrastructure, inadequate user preparedness, and concerns about instructional quality. For example, Hansson (2021) identifies difficulties in Kenya, Japan, and India, where primary, secondary, and university students struggled with digital competency and where educators relied heavily on teacher-centered methods. Similarly, Kibuku et al. (2020) detail the specific challenges Kenyan universities faced, including insufficient ICT infrastructure, the lack of e-learning policies, and budget constraints, all of which inhibited the effective implementation of online education. Additionally, Osabwa (2022) found that social distancing measures in Kenyan higher education institutions led to a near-total halt in operations, particularly in areas with minimal access to instructional technology.

These findings collectively suggest that while online learning holds transformative potential, its success depends on overcoming significant structural challenges. Developing countries, in particular, require policy support and investment in digital infrastructure to bridge the digital divide and sustain educational quality. Overall, synthesizing these studies indicates that the feasibility of online learning hinges on context-specific adaptations that account for existing resources, teacher preparedness, and technological competency across diverse educational settings.

2.3 The Influence of Online Music Learning on Student Engagement

The COVID-19 pandemic caused significant disruptions to teaching and learning practices worldwide. According to Tarkar (2020), while the pandemic originated in China, it quickly spread worldwide, reshaping educational methodologies from traditional in-person to online content delivery. Several studies have documented the rapid transition to online learning, including the closure of universities and colleges and the shift from face-to-face teaching to e-learning (Huang et al., 2022; Tarkar, 2020; Wang & Qing, 2023). This shift, however, posed significant challenges. Peng and Wang (2022) argued that, for disciplines such as bio-pharmaceutical studies in China, students cannot rely solely on online instruction because the lack of direct engagement limits teachers' ability to assess students' comprehension and learning progress. This observation highlights a major limitation of online education: the absence of physical presence and real-time, hands-on engagement, which can affect practical learning outcomes, since effective laboratory learning experiences require in-person, hands-on engagement of both the teacher and the learner.

The reduction of in-person contact in favor of e-learning technologies allowed educators to maintain some level of student engagement, although it also revealed limitations in effectiveness (Joseph & Merrick, 2021; Rucsanda et al., 2021; Zhao & Watterston,

2021). For instance, Zhao and Watterston (2021) emphasize the psychological and motivational challenges that arose from the lack of face-to-face learning, while Rucsanda et al. (2021) note that educators had to quickly adapt to online music education tools to manage their teaching responsibilities and align with institutional expectations. Yet, these studies primarily focus on developed countries, raising questions about generalizability to regions with less robust digital infrastructures. This gap is addressed by Mhlanga (2021), who found that learners in rural South Africa experienced severe barriers to accessing online learning due to limited internet connectivity, lack of devices, and ineffective online learning management systems.

A notable divergence among these studies lies in the methodologies and the scope of their analyses. While researchers like Peng and Wang (2022) focus on specialized disciplines that emphasize practical engagement, Mhlanga (2021) adopts a broader, socio-economic perspective to highlight systemic inequities affecting access to online education. Furthermore, while some studies suggest complete reliance on virtual education (Joseph & Merrick, 2021), others, such as Wang and Qing (2023), argue that a blended approach of online and offline teaching provides a more effective learning experience. Wang and Qing's research, which emphasizes a mixed-methods approach to assess the blended model, showed improved student performance and greater learning flexibility, yet they also noted challenges, particularly around digital accessibility and skills deficits.

Most existing studies on online music education focus on higher education settings or on developed countries. The exploration of online music education in secondary schools in developing country settings is therefore limited. Besides, few studies examine the challenges of student engagement in online music education under difficult conditions, such as limited digital infrastructure, as in the case of Kenyan secondary schools.

2.4 The Effect of Online Music Learning on Practical Skills Development

The reduction in learning time was cited as a challenge arising from the adoption of online learning. Music education, like other learning sectors, had to deal with a myriad of issues given the onset of COVID-19. Daubney and Fautley (2020) highlight that the pandemic had ramifications for music education in the UK. The study posits that private education providers such as WCET employ a class ensemble learning approach, enabling children aged 5-18 in England to learn music. With the onset of COVID-19, face-to-face teaching models had to be suspended or adapted to lockdown requirements, which reduced the time learners spent learning (Ayyıldız & Zahal, 2022; Daubney & Fautley, 2020; Shaw, R. D., & Mayo, 2022).

The pandemic led to the loss of music teachers due to economic effects and curricular reorganization, and students missed out on practical lessons that require the physical presence of a teacher (Daubney & Fautley, 2020). Music is a very practical subject, and the loss of practical study time greatly affected learners. Ayyıldız and Zahal (2022) reiterate the difficulties of teaching music in the COVID-19 environment, noting that technological capacity fails to capture the emotional appeal and that individual lessons on playing musical instruments are almost inseparable from face-to-face interactions.

Music education experienced disruptions, leading to reduced motivation among teachers and students. Shaw and Mayo (2022) conducted polls with parents, and 71% indicated that music students experienced less learning time and content in their distance learning arrangements. Teachers felt less motivated to teach remotely and gave fewer assignments, and students from poor backgrounds were disproportionately affected by the new content delivery. However, not all researchers expressed pessimism during the COVID-19 period. Li et al. (2021) expressed optimism about the hybrid pedagogy, in which face-to-face teaching and practice of music had to be replaced by a synchronous

approach to music learning. The study indicated that online learning aided by technologies such as Cisco, Google Classroom, and Zoom, among others, constituted a hybrid learning pedagogy.

However, the study does not show the effectiveness of the blended learning system, especially in music. The students do not have the same level of engagement in online learning as in physical learning for music classes, such as dance, nor do they achieve the same quality at home as in dance studios (Li et al., 2021). Octaviani (2021) examines the unequal resources and capabilities at home and school for music learners, indicating a gap created by unequal access to music learning facilities. Hash (2021) reported similar findings after studying remote learning in primary and secondary institutions, which affected poor students more in rural areas.

Redesigning music pedagogy faced significant setbacks, given that online music education was a new phenomenon not encountered before the COVID-19 pandemic. For example, institutional learning lacked a unified approach to addressing COVID-19 learning systems that required online platforms (Schiavio et al., 2021). Therefore, learners and teachers spent time experimenting with various digital platforms to see which platform was most suitable for music education, wasting time and resources in an economically challenging learning environment (Botstein, 2019; Hash, 2021).

The new learning environment during COVID-19 faced challenges, including internet connectivity issues, low achievement in the curriculum, complexities in classroom management, and a lack of technical knowledge in using technological equipment (Gül, 2021). The technological equipment also poses challenges in delivering content. For instance, Hash (2021) indicated that videoconferencing technologies such as Skype and Polycom experience latency and sound clarity issues when used for synchronous lessons in music practice. The sound quality and frequency delays affect the delivery of lessons

to learners by music education teachers, reminding all participants that not everything is real and that this is a challenge to accepting the model.

Other studies that elucidate the challenges of online music teaching indicate that it is difficult to redesign the curriculum to fit online pedagogy. For example, Kibici and Sarikaya (2021) noted that teachers lacked competency and that the teaching strategies demonstrated ineffective planning and content compilation, as well as deficiencies in creating synergies among the community, the learning environment, and learners in online environments.

The mode of music learning and teaching music also became more problematic as music educators deviated from the face-to-face model. For instance, Kesendere et al. (2020) found that some music lessons, such as violin practice sessions, require proximity between teachers and students because of the delicate nature of the structural difficulties involved in playing these complex musical instruments. Synchronous and asynchronous means were less effective when students played the instruments at home without teacher guidance. Rosset et al. (2020) agree with the position on online music education, indicating that it is difficult for teachers to monitor movement during singing lessons, posture, or performance attributes.

Gul (2021) shared similar views, indicating that online learning environments do not adequately support the learning modalities for music lessons that require practical lessons, including demonstrations and one-on-one engagement between learners and tutors. Under new online systems, teachers and students must experiment with digital music products and tools and remain creative to learn amid the complexities of the online environment (Thorgersen & Mars, 2021). However, finding the balance between the right tools for music practice and having students improvise with new learning methods does not guarantee optimal learning conditions for music educators. Music learning

institutions do not seem to have developed a robust policy framework for formally teaching music online, which has emerged as an alternative amid unprecedented social distancing challenges (Shaw & Mayo, 2022).

While some studies acknowledge the challenges of developing practical skills in online music education, the specific effect of the learning mode on learners' practical skill acquisition remains underexplored. Furthermore, little is known about how schools have adapted or responded to challenges, for instance, through both pedagogical and technological changes.

2.5 The Influence of Students' Attitudes Towards Online Music Education on Their Academic Performance

The overall consensus in the research literature is that music education during COVID-19 needed to adapt to learning disruptions through an online approach. Kesendere et al. (2020) highlighted the benefits of online education during the COVID-19 period, including flexibility in study times, rapid data collection, reduced costs of learning processes, and the encouragement of collective work through interactive communication. Therefore, music learners can use distance education from their homes and still attend music classes via online platforms.

However, the disadvantage of online systems also exists when learning institutions lack harmonious policies to align curriculum needs with teaching pedagogies (Shaw & Mayo, 2022). Also, the digital divide is difficult, as students in rural areas lack access to internet connectivity and technological software and knowledge of their use in learning music, resulting in reduced access to online education content and guidance from music teachers (Hash, 2021; Adarkwah, 2021). Strategically, the shortcomings of online learning also created opportunities for investment in technological infrastructure as an alternative to physical learning in music education. Wang and Qing (2023) indicated that a mix of

online and offline teaching methods offers students higher flexibility and helps them achieve better learning outcomes. Similar studies conducted by Gul (2021) and Daubney and Fautley (2020) also point to the need for classroom learning where subjects like music require significant practical engagement between teachers and students. Educational pedagogies can leverage these findings to support appropriate development in music education across online and conventional systems.

While the existing literature acknowledges the benefits and challenges of online music education, ranging from pedagogical to logistical, there is limited research on the implications of students' personal attitudes toward online music education for learning and academic achievement. This aspect is particularly underexplored in the context of secondary schools in Kenya and other regions with similar socio-cultural, institutional, and technological dynamics.

2.6 The Outcome of Teachers' Capabilities in Online Music Education and Instruction on Students' Academic Performance

In a study assessing the experiences of music educators at a primary school in Slovenia, Adam and Metljak (2022) found that teachers acquired greater digital literacy during the pandemic than before, enabling them to become more innovative in teaching music lessons to their learners.

Despite the challenges faced by online education delivery, the study indicates that digital learning offers significant benefits to music teaching processes, including synchronous interactivity and fluid communication between learners and music tutors, and offers new opportunities to redesign education curricula to fit emerging needs in digital learning circumstances. However, the usual problems that other authors have identified, including a lack of adequate knowledge to use electronic learning tools and a less developed information and technology infrastructure, continue to plague online music learning

innovations (Adam & Metljak, 2022; Yildiz et al., 2021; Kibici & Sarikaya, 2021).

Nusiratt et al. (2022) indicated that the demand for remote learning technology has increased since the COVID-19 lockdowns. On the other hand, Schiavio et al. (2021) indicate that the pandemic has put pressure on teachers not only to adapt to digital technology but also to be efficient in using ICT to attain high pedagogical standards in the classroom. According to Bautista et al. (2021), the lack of preparation among music teachers after the pandemic has resulted in classroom challenges, including low confidence, poorly executed pedagogical practices, and partial fulfillment of curriculum requirements. Other studies indicate gaps in teacher training, investment in technological infrastructure such as digital studios, and a low level of teacher motivation to undertake online music education (Li et al., 2021; Kibuku et al., 2020; Akombo, 2022).

Other studies have argued that a blended system of online and offline music teaching is necessary to integrate music education with COVID-19 control measures properly. For instance, Yilmaz et al. (2021) identified time-saving and flexibility as desirable concepts in online education, but limited time for studies, infrastructural deficiencies, and limited mutual communication act as impediments to online learning. The findings on the benefits and shortcomings of online learning show the need for a blended system that complements physical teaching without eliminating either.

Akombo (2022) identified technological gaps in music education in Kenya, insisting that teachers have the opportunity to invest in high-speed internet, video equipment, and digital devices to leverage internet capabilities. Wider investments were made in higher-speed internet, with the government and private sector supporting the development of internet infrastructure within learning institutions to augment educational activities. Furthermore, the crisis period motivated music teachers to pursue training, and many sought training to transition to online teaching with appropriate adaptations and digital

skills (Yildiz et al., 2021).

With the advent of online learning during COVID-19, music educators have discovered the indispensable nature of virtual distance learning and technological tools in delivering learning amidst physical distancing requirements. Calderón-Garrido et al. (2021) argued that the COVID-19 era brought about online teaching methods that depended on educators' technological capabilities and competence in using digital devices to teach music lessons. They further suggested the development of instruments such as synthesizers and controllers to create musical sounds and timbres, and systems for the electronic production of musical content.

Kilincer (2021) indicated that smartphones, computers, and the internet are education technologies that can propel education systems in times of uncertainty. The study argues that adaptable electronic technologies are necessary for effective teaching, which requires innovation to align pedagogical approaches with digital teaching materials to achieve the course outcomes. However, subsequent research on online education emphasizes the need to align teachers' attitudes with the outcomes of digital education to ensure that educators are motivated to address students' challenges in the new learning conditions (Thorgersen & Mars, 2021).

Despite the existing literature recognizing that teachers' digital competencies and readiness for the transition to online music education influence the effectiveness of teaching and learning, there is limited research investigating the direct nexus between teachers' digital competencies and students' academic achievement in music. The scarcity of such research is even more pronounced in the context of secondary schools in developing countries, which, as Cheruiyot & Jelimo (2025) assert, lag in teacher digital literacy.

2.7 Theoretical Framework

This study explores the influence of online music education on the academic performance of music students in secondary schools in Nairobi County, Kenya. Online education was largely necessitated by the circumstances surrounding the COVID-19 pandemic, which means that most schools and stakeholders, including teachers and learners, were forced to transition rapidly from traditional teaching and learning to using online and remote learning. That notwithstanding, education has largely been conducted in face-to-face, in-person traditional settings. With both teachers and students being accustomed to this setting, conducting online education becomes a change from the usual.

To explore the subject under study, which, as explained above, occurs alongside the aspect of change, the study adopts a theory that marries Kotter's 8-Step Change Model and Lewin's Change Management Model.

2.7.1 Lewin's Change Management Model

Lewin's (1947) change management model is highly relevant in all situations that call for change. It explains the institutional and psychological adjustments that schools, teachers, and students had to undergo and acknowledges the different phases of the change. Further, it helps explain how the different phases of change among teachers and students may affect student achievement. Originally, Lewin's change management model was applied to organizational and behavioural change, specifically to social and workplace transformations following World War II.

The COVID-19 period necessitated a rethink of the approaches music students could apply in learning music. The pandemic occurred across a period of at least two (2) years, justifying the need to consider a substantive change approach that may save the music fraternity from hastened changes in future disruptions.

The first stage, called unfreezing, entails recognizing the necessity of change prompted by the COVID-19 disruption to education. Music educators, administrators, and students were accustomed to the interactive, in-person nature of music classes, which allowed for direct feedback and hands-on practice. The pandemic, however, made an online transition imperative, thus challenging traditional methods. Schools initiated this phase by preparing stakeholders for this shift – highlighting the limitations of current infrastructure, the urgent need for online platforms, and the skills gap for online instruction. For instance, institutions conducted preliminary assessments to identify the resources required for online music education, including stable internet, digital tools, and teacher training on platforms such as Zoom, Google Classroom, and music-specific software for digital instruments and notation.

During the changing phase, schools implemented new tools, strategies, and structures to facilitate online music learning. Educators adopted digital tools to recreate the interactive elements of music education, using virtual instruments, digital sheet music, and collaborative software to allow students to practice and perform remotely (Pozo et al., 2022; Ververis & Apostolis, 2020). Teachers received training on using these tools effectively, and some schools provided students with access to home practice kits, digital sheet music libraries, and video tutorials. An example is the use of music collaboration software such as Soundtrap or BandLab, allowing students to work on compositions collectively online. Through these digital resources, educators could provide feedback, monitor students' progress, and adapt to this new learning environment.

In the final stage, known as refreezing, schools institutionalized these changes as a permanent part of the learning culture, laying the foundation for sustained flexibility and future resilience. Recognizing the benefits of digital tools, some schools decided to

maintain a blended learning model even after resuming in-person classes, ensuring that online resources continued to support traditional music education. This included regularly updating the software and training educators, integrating digital music theory resources into the curriculum, and establishing protocols for maintaining online learning continuity in the event of future disruptions. Music departments began to embed digital tools as an essential component of their teaching strategy, facilitating a hybrid approach that enables both in-person and remote learning.

Hussain et al. (2018) indicate that change stakeholders have to consider the intersection between the relevant process approach, in particular, with reference to the change needed. Some variables can influence the change management approach, affecting music educators and the music learning environment in Nairobi County. Possible issues around technological infrastructure can determine attitudes towards online music instruction. A learner/tutor household unable to mobilize internet-based resources may fail to achieve the online music learning goal. In contrast, a family with the capacity to access these resources may succeed. The uptake of skills by music educators, as a variable, can affect the delivery of online music instruction.

The Kurt Lewin model emphasizes that all change management actors remain cognizant of the immediate context to ensure change success. Hussain et al. (2018) observe that change actions can focus on disrupting the status quo if such an initiative increases the chances of success. Disrupting the status quo may require the incorporation of broader stakeholders, including information and communication technology (ICT) officials in Nairobi County.

2.7.2 Kotter's 8-Step Change Model

Kotter's (2007) 8-step management model encourages the creation of a systematic 8- 8-phase framework designed to assure change in a given environment. At the first step,

John Kotter emphasizes the need to establish a sense of urgency to activate the desired change. The model was first applied in the business and organizational management arena, specifically, in the context of transformational change within corporations and institutions. One highlight of the model is that Kotter observed that change initiatives would fail during transitions due to human resistance and poor execution, rather than poor strategy.

This study acknowledges that changing learners' attitudes towards online music learning systems is a drastic change that requires human cooperation rather than resistance, and excellent, rather than poor execution. Besides, no one can predict the occurrence of another pandemic based on the situational realities associated with the COVID-19 experience. The model can therefore guide the study in understanding the transition to online music education in secondary schools.

The model also speaks to the need for having guiding teams that can lead the change process. Guiding teams, in this case, creates the space for a substantive evaluation of the immediate change environment. Considering the possible presence of varied attitudes toward the introduction of online learning in Nairobi County private schools, the teams can achieve holistic success by considering all change angles.

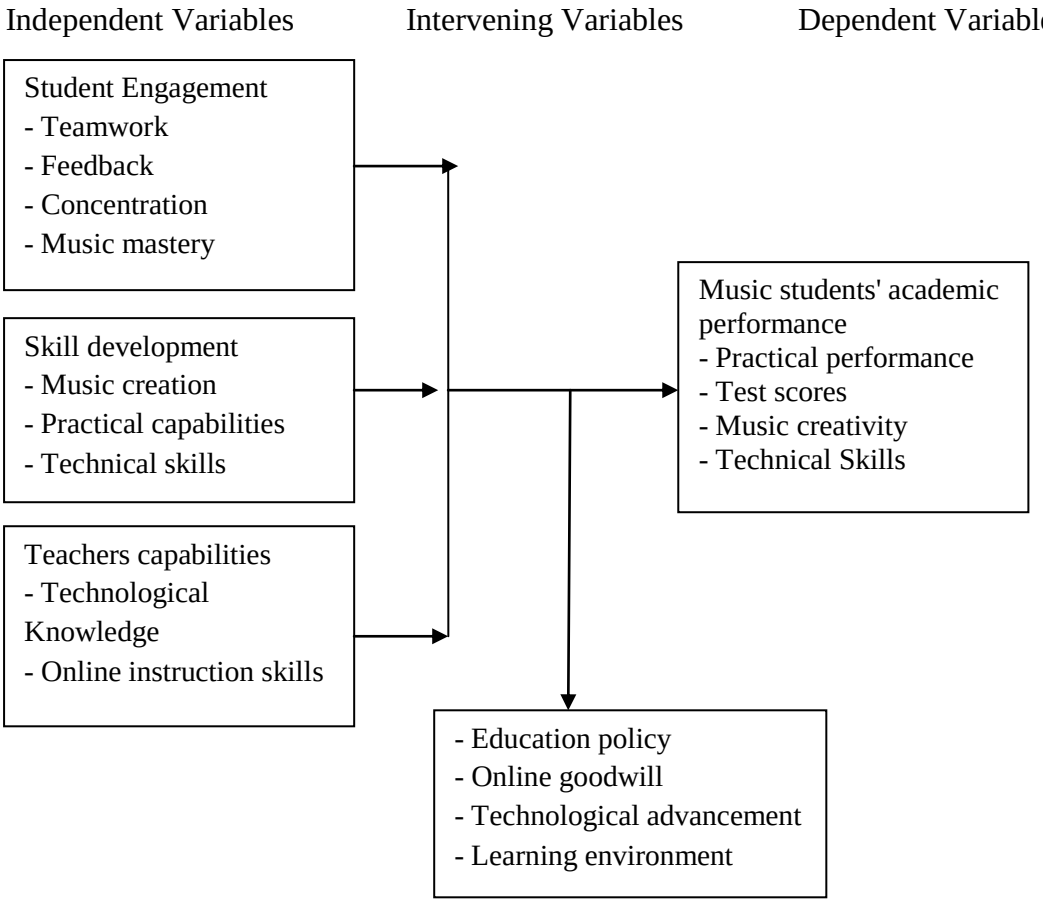
Wentworth et al. (2018) propose that getting the vision right serves as a precise reference to Kotter's third change stage. If music education stakeholders expect a positive influence of online instruction approaches on the performance of music students in Nairobi County, they must have a clear vision of online learning. The right communication follows all stakeholders, succeeded by the need to trigger action. Kotter procedurally advises on the need to visualize and create short wins. The gradual realization of the change process will clarify the wider goal. No single educational stakeholder should give up, and they should allow the online learning approach to

advance. Kotter's model rises above Lewin's change management model in managing the variables that can lead to negative outcomes.

2.8 Conceptual Framework

Figure 1

The Conceptual Framework for this Study



Source: Author (2024)

The conceptual framework shows the relationships among the dependent and independent variables, while identifying intervening variables. The independent variables influence the dependent variable in several ways. The independent variables, including skill development, student engagement, student attitude, and teachers' capabilities, influence music academic performance by fostering knowledge acquisition, practical and technical skills, and the right attitude for good academic performance in music education.

Intervening variables mediate between the independent and dependent variables by facilitating the music education process. For instance, technological tools support virtual instruction, online education culture determines adoption rates, and political will facilitates infrastructural development in online music curricula and other support systems. The learning environment also affects study outcomes.

2.8 Research Gaps

The existing literature addresses the challenges, opportunities, and attitudes towards the technology used in online music education. There is support for the use of both offline and online teaching strategies due to the advantages of combining the two models (Tarkar, 2020; Wang & Qing, 2023; Jiang et al., 2022; Xie et al., 2020; Wang & Qing, 2023). Some studies identify weaknesses of online methods, including knowledge gaps, a lack of technological infrastructure, such as the internet, to support virtual teaching and engagement, and unequal access among learners (Adarkwah, 2021; Mhlanga, 2021).

However, few studies have examined the influence of online learning on the academic performance of music students in private secondary schools. Some studies indicate that reduced learning time and the lack of in-person contact were challenges both learners and teachers experienced. Few studies examine the effects of reduced learning time and the absence of physical contact on the performance of music students.

The majority of the research focuses on public schools and the challenges they face. This study addresses the existing gaps and provides insight into the influence of online music education on the academic performance of music students. The study addresses the aspects of attitudes towards online music education, student engagement, teachers' capacity, and skill development.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section presents the research design and methodology that were used in this study. The study explored Online Music Education within selected private secondary schools in Nairobi County, Kenya. It aimed to gather teachers' and students' views on online music learning experiences. This chapter explains the reasons for selecting the methodologies used to gather data for the study. It discusses the research design, the study location, the study population, the sampling procedure and sample size, instrumentation, pre-testing, the instrument's credibility and dependability, the data collection procedure, data analysis, and ethical considerations.

3.2 Research Design

This study assumes a constructivist ontological position, with the stance that students' experiences of online music education differ based on their unique conditions, such as their environment, access to digital infrastructure, and perspectives, as outlined by Ayton and Tsindos (2023). Further, it assumes a constructivist approach, taking the view that knowledge is constructed through unique human experiences and varying interpretations, as explained by Ignacio and Paras (2024). The researcher assumes an etic role, studying the phenomena from an outsider's perspective, relying on predefined categories and theories to collect data, analyse, and interpret findings, as advanced by Patton (2015).

The study, therefore, adopts an exploratory research design, which is appropriate for delving into new events or previously unencountered phenomena within the qualitative research umbrella (Creswell & Creswell, 2018). There has never been a situation such as COVID-19 in the history of music education in Kenya. COVID-19 complicated the music teaching and learning environment and forced teachers and learners to

develop new strategies to manage it. The exploratory research design was appropriate, as it was used to gather information that can be applied in the future to solve problems or carry out further study (Leavy, 2017).

This exploratory research design allowed the researcher to gather qualitative data in natural, contextual settings where human behavior and events occur, before rigorously discussing them in the findings and discussion section of the study (Creswell & Creswell, 2018; Leavy, 2017). The design is appropriate given that the researcher interviewed students and teachers who have undertaken online music education in private secondary schools in Nairobi County, Kenya.

An exploratory research design is well-suited for this study as it aims to uncover new insights into the relatively uncharted domain of online music education in Kenya, focusing on private secondary schools in Nairobi County. This design aligns with the objectives and research questions by providing the flexibility to explore how online learning affects various facets of music education, including student engagement, practical skills, attitudes, and teacher capabilities.

Exploratory research is particularly relevant here, as the Kenyan context has limited prior research on online music education, making it essential to gather baseline information to identify unique challenges and opportunities in this setting. For instance, the study seeks to establish how online learning influences student engagement (Objective i) and practical skills development (Objective ii), areas that likely require a nuanced understanding, given that music education traditionally relies on hands-on, interactive instruction. An exploratory approach allows open-ended inquiry, enabling the researcher to probe deeper into students' and teachers' experiences and identify factors that may not be immediately apparent.

Additionally, the design supports examining students' attitudes towards online music education (Objective iii) and teachers' capabilities in online instruction (Objective iv) by capturing the perspectives of both students and educators in this new learning environment. Since attitudes and capabilities are complex constructs influenced by personal, technological, and institutional factors, an exploratory framework provides the necessary scope to analyze these influences without being restricted by rigid variables or preconceived hypotheses. Through interviews, analysis, and observational techniques, the research can identify patterns and themes that would be missed in more restrictive study designs.

The study participants had time to respond to interview questions about how online music education affects student engagement, attitudes towards online learning, and learning outcomes, as well as skill development. It allowed the researcher to collect detailed insights into participants' experiences in online music education through in-depth interviews, to document information from affected teachers and students. The qualitative nature of the exploratory research design manifests in multiple ways (Roller, 2015). One, the intentional preference for interviews allows for the extraction of in-depth information, an extensive understanding of participants' contexts, an understanding of their behaviors, and their motivations for participating in this project. The qualitative dimension also allows for holistic conclusions about the matter of interest through the synthesis of data, identification of potential patterns, interpretation of trends, and analysis of opinion segments.

The data were collected from students in forms one to four, drawn from the study sample population within 50 private secondary schools in Nairobi County, Kenya. All participants were randomly selected. As Noor et al. (2022) indicate, random sampling enhances the representativeness of the sample and contributes equally to the

generalizability of the search results. Teachers engaged in online music education at selected institutions were also interviewed to provide feedback on the potential of online music education and its impact on student academic performance.

As Olawale et al. (2023) note, exploratory research offers advantages for answering the question of how, which is the central question in this study. Another strength of the exploratory design is that it lays a strong foundation for future studies by uncovering new information. This aspect, further buoyed by the fact that the use of interviews in the exploratory dimension provides a broader research context (Frey and Fontana, 1991), informs the choice of the research design and data collection method for this study.

3.3 Location of the Study

The study was conducted in Nairobi County, Kenya. Nairobi County is situated in the central region of Kenya and is cosmopolitan, with schools representing those across the country. There are teachers and students of various socio-economic backgrounds and experiences in the schools. The researcher was able to gain relevant and reliable feedback during data collection from the wide private school population in Nairobi. The other reason the county was selected was its central location and easy accessibility across the country. Transport, accommodation, and access to schools are readily available within the county, which supports the execution of the study.

3.4 Population of the Study

The target population was secondary private schools that teach music in Nairobi County, Kenya. According to Creswell and Creswell (2018) and Mocănașu (2020), there are no specific rules on the number of participants required in qualitative studies, and the appropriateness of the sample size is a matter of judgment by the researcher. However, as Ahmed (2025) indicates that, while no rigid digits are recommended since each research is unique, the researcher ought to aim for saturation, which is approximately attained at

around nine to fifteen interviews, or four to eight focus groups. The researcher therefore recruited and interviewed 50 students and 20 teachers, all drawn from 50 out of all the 302 private secondary schools in Nairobi County (Regional Directorate of Education – Nairobi County, 2023). To be selected, participants had to have engaged considerably in online music education.

This size allows for in-depth interviews during data collection while ensuring the research can be completed efficiently with limited resources. A larger sample may pose logistical challenges, including difficulties with data collection and analysis. The chosen sample size aims to ensure a diverse representation of the teaching staff and student population in private secondary schools. By including 20 teachers from various schools, the study captures a range of teaching experiences, methodologies, and perspectives regarding online music education.

Similarly, a sample of 50 students can capture varying levels of engagement, skill development, and attitudes toward online music learning, offering a comprehensive understanding of the issues at hand. In qualitative exploratory research, the focus is often on depth rather than breadth. A sample of 50 students provides meaningful insights into student experiences and perceptions while remaining feasible for qualitative methods, such as thematic analysis. The inclusion of 20 teachers facilitates a robust examination of instructional practices and challenges in online music education. Together, this sample size strikes a balance between being large enough to provide statistically relevant insights while also allowing for detailed qualitative analysis.

The sample size aligns with norms observed in similar studies within the field of education, including Akarsu (2021) (24 teachers) and De Bruin (2021) (15 teachers). Previous research in the context of music education or online learning often utilizes a sample sizes that are manageable yet sufficient to yield rich qualitative data. This

alignment reinforces the rationale for selecting an appropriate sample size for the context and research objectives. The sample size also considers potential pre-testing or preliminary findings that may suggest the need for adjustments.

As exemplified in MacRitchie et al. (2023) with 15 teacher participants and Yılmaz et al. (2021) with 22 student participants, data collected from 20 teachers and 50 students can inform the research direction and help identify key themes. Further, as Ahmed (2025) indicates, such data can then be expanded or refined in future phases of research if necessary. This sample size is supported by Dworkin (2012), who states that the typical number of qualitative participants in research studies is 25-30. The study aimed to research private secondary schools because this enabled comprehensive coverage and a clear understanding of online music education in private secondary schools within Nairobi County.

Nairobi County is cosmopolitan, as it is also home to Kenya's capital city. To this effect, it is an urban environment inhabited by people from all walks of life. One example of the differences in backgrounds includes the racial angle, ethnic dimension, new entrants, and long-term residents. That cosmopolitan nature can imply that individuals are differently exposed to realities such as technology. It can create variation in socioeconomic opportunity. It is the city's cosmopolitan nature that qualifies it as home to people from varied socioeconomic classes. The cosmopolitan reality enhances this study's generalizability across different socioeconomic backgrounds in Nairobi County.

The study recognizes potential limitations associated with its focus on private schools. To begin with, the focus may retain the researcher within a single socioeconomic demographic. Private schools admit students who can fully afford to pay for all utilities within the school. An assumption remains that only well- resourced parents/

guardians can manage to sustain learners in such a learning environment. This assumption supports the observation that this study may be limited to a demographic sharing equal socioeconomic ability. Additionally, due to the first limitation, the study may fail to obtain diverse views from participants. However, the reason for using private schools is the need to assess the factors influencing the adoption of online learning across a universal or uniform demographic. It is for the sake of results' actionability that the study uses that demographic.

3.5 Sampling Procedure and Sample Size

The study employed purposive sampling to select the schools and participants. Music teachers and students were randomly selected as respondents based on random sampling from 50 out of 302 private secondary schools in Nairobi County (Regional Directorate of Education – Nairobi County, 2023). Schools offering a curriculum close to the one specified by the Kenya Institute of Curriculum Development were selected (see tables 1 to 4). Schools were selected based on their adherence to the curriculum outlined by the Kenya Institute of Curriculum Development (KICD), specifically in music education. This ensures the research focuses on institutions with a structured, recognized framework for music teaching, making the findings more relevant and applicable. Schools were evaluated for their access to technological resources that support online learning. Factors such as computer availability, reliable internet connectivity, and digital learning tools were considered critical to effective online music education.

Schools with a robust technological infrastructure were prioritized to ensure that participants could engage meaningfully in online learning. Preference was given to schools with prior experience in implementing online learning methodologies. The criteria sufficed in identifying institutions that had already begun to adapt to the challenges posed by COVID-19, thereby enriching the study with insights from

educators and students who had navigated this transition. Efforts were made to include schools from diverse socio-economic backgrounds to capture a broader perspective on the challenges and opportunities of online music education. Schools from both affluent areas and those in less economically advantaged neighborhoods were selected, allowing for a more comprehensive understanding of how socio-economic factors influence access to and engagement with online music learning.

Purposive sampling is useful when the characteristics of the population are known and the data required for the study are pre-determined so that only the relevant population sample will be interviewed (Palinkas et al., 2015). This method is also useful for selecting schools to form the sample population, as only private secondary schools in Nairobi County offering music education are required. Participants were selected based on their roles within the school community—specifically, music teachers and students actively involved in the music curriculum. Teachers needed to have taught online music education and have adequate experience in teaching music, ensuring that they could provide informed insights into the online teaching and learning process.

Students were invited to participate and were required to have participated in online music classes during and after the pandemic, allowing them to share relevant experiences to qualify. Further, interested students were issued with consent forms that clearly stated that their participation was voluntary. This ethical consideration ensured that only individuals who had a genuine interest in sharing their experiences and insights were included in the study. Consent was also obtained from teachers prior to their participation. The resulting sample included a diversity of experiences and perspectives. For example, teachers with varying levels of experience in online education, as well as students from different grades and musical proficiency levels, were included to capture a rich tapestry of insights. To ensure a well-rounded understanding of the music education

landscape in Nairobi County, schools were selected from across the county's regions. This geographical diversity was crucial for assessing how different contexts influenced online Music education.

As Majid et al. (2015) proposed, a pre-test study was conducted to assess the viability of the interview questions by seeking dummy responses to correct weak ones and generate a robust interview schedule. The pre-test included a smaller sample of about 30 individuals. A random sample of 20 teachers and 50 students was selected from a purposive sample of 50 private secondary schools in Nairobi. As Stratton (2023) observes, random sampling of study participants reduces bias in the population study by ensuring that every member has an equal chance of selection and reduces the subjectivity of the researcher in selecting preferred subjects.

3.6 Instrumentation

The study employed interviews to collect data. Interviews are effective for collecting qualitative data from both teachers and students. By asking open-ended questions, participants can use their own words to explain their own experiences and reality (Yin, 2015). Additionally, participants are likely to give their answers without being limited to yes-or-no responses or by selecting from provided options. Further, it enables the researcher to seek clarifications and make further discoveries about the aspects under study by asking questions and seeking additional comments (Merriam, 2009). The data obtained is often detailed and more useful in qualitative analysis.

The researcher collected relevant information on how students' attitudes toward online music education affect music education outcomes, the possibility that this education enhances music skill development, how online music education results in student engagement or lack thereof, and teachers' capabilities in online music instruction and students' academic performance. The interviews were conducted online via Google

Meet, Skype, Zoom, by phone, or face-to-face with the respondents.

3.6.1 Pre-Testing

Pre-testing was conducted in five private secondary schools in Nairobi County. Interviews were conducted with students and teachers of the five schools. These selections aimed to capture the range of private secondary schools available in Nairobi County, Kenya. Feedback from pre-testing revealed that some interview questions were phrased in a way that could lead to ambiguity or confusion among participants. Some educators found specific terms related to online learning technology unclear, suggesting a need for simplification. As a result, these questions were rephrased in simpler language, ensuring participants could easily understand and engage with them.

During pre-testing, participants indicated that certain questions were not directly relevant to their experiences with online music education. For instance, some questions focused more on general educational challenges than on specific challenges in music education. Based on this feedback, questions were refined to better align with the study's objectives, ensuring that they specifically addressed the nuances of online music learning. Presser et al. (2004) indicate that the number of respondents for a pre-test can vary depending on the complexity and needs of a study. The pre-test included 30 participants. The pre-test is an engagement with real research respondents prior to the study to test the credibility of the study instruments and improve them for a better experience during the actual research. This improves their accuracy and dependability in interviewing more individuals within a study.

3.6.2 Credibility

Content credibility served as the basis for testing the instrument's credibility through a pre-test study conducted in 5 private secondary schools (30 respondents), which was expected to provide sufficient feedback and evidence (Presser et al., 2004). The

instructions and questions for the interview and questionnaire were reviewed to determine whether they address what needs to be addressed to answer the questions in the research. This was accomplished through respondents' feedback after the interview on the questions or areas of the pre-test that were not straightforward or clear to them. Information on the instrument's credibility also included feedback from the researcher's supervisors throughout the study.

3.6.3 Dependability of the Instrument

Dependability was measured in the study to ensure that the research instrument yields consistent results across multiple trials. The study varied the settings in which the researcher administered the research instrument to several groups of participants, as suggested by Lewis (2009). The instrument was considered dependable if the results across all groups were highly correlated and participants' responses remained stable and similar throughout.

3.7 Data Collection Procedure

A research permit was needed to complete this study. The permit was sought from the National Commission for Science, Technology, and Innovation (NACOSTI), the body that issues research permits in Kenya. Permission to conduct the study was also sought from the private schools where the surveys were conducted, as recommended by Bonell et al. (2023).

Once the school heads granted their permission, the teachers and students who participated in the survey were approached to obtain their consent for the study. At this point, the researcher used a prepared questionnaire to guide the interviews, collected data from the population sample, and prepared it for analysis using relevant tools by administering interviews to randomly selected students and teachers in private secondary schools in Nairobi County.

The interviews were primarily conducted face-to-face, while some were via mobile communication or on online platforms such as Zoom to accommodate participants' schedules and enhance accessibility. In-person interactions were held in safe, neutral locations such as school offices or classrooms, with the institutions' teachers and staff assisting and supervising. Each interview lasted approximately 30 minutes, allowing participants to discuss their experiences and insights while keeping the sessions focused and efficient.

Many educators and students had busy schedules, which sometimes made it difficult to find suitable interview times. To mitigate this, flexible scheduling options were provided, with participants able to choose from multiple time slots. Additionally, reminders were sent out before the scheduled interviews to confirm attendance and reduce the likelihood of no-shows.

3.8 Data Analysis

After data collection, the next step was to arrange and organize the information for analysis. This involved arranging materials and transcribing the interviews. The researcher then read through all of the sorted and transcribed material to form a clearer, more solid grasp of the information (Creswell & Creswell, 2018). Coding the data followed, in which the researcher organized and grouped it into categories identified with representative titles.

A word or phrase is assigned to segments of data, which helps reduce and classify the information (Leavy, 2017). The study applied *NVivo* coding, in which codes and titles were maintained and prioritized, and the participants' exact language used during the interviews was mirrored as closely as possible (Creswell & Creswell, 2018). A deductive coding approach was initially used, guided by the study's objectives and research questions. This involved identifying predefined codes related to themes such as student

engagement, practical skills development, attitudes toward online music education, and teacher capabilities. After the initial coding, an inductive coding process was applied to capture emergent themes and insights that arose from the data, which may not have been anticipated in the initial framework (Bradley et al., 2007).

Next, generate a description and themes, grouping detailed information about participants and schools or settings/contexts under the description, while codes are grouped into broader themes that appear as major findings and headings in the findings section of the study (Vaismoradi et al., 2023). This is also known as thematic analysis coding. Lastly, the study interpreted and explained the description and themes through a detailed discussion of its findings.

3.9 Ethical Considerations

During the course of the study, the researcher adhered to relevant protocols to protect the confidentiality of respondents and participants, especially because a section of the respondents were minors and the privacy and information of all respondents needed to be protected (Ndayisenga et al., 2024). Interview materials and personal identifiers, such as consent forms, were stored in a secure, locked file cabinet, and sensitive computer files or documents were encrypted with passwords. To maintain respondents' confidentiality during phone or online interviews, all digital communications were conducted via secure platforms (Neris et al., 2023). This ensured that the interview recordings were protected from unauthorized access.

Respondents were assigned unique identification codes, which were used in place of their names in all research documentation and reporting to enhance confidentiality and anonymize data (Kaiser, K., 2009). This anonymization process helped to protect their identities and maintain privacy throughout the study. All collected data, including interview recordings and transcripts, were stored on a password-protected computer and

backed up on a secure external drive. Access to this data was limited to the researcher, ensuring that respondents' information remained confidential.

The researcher also worked to protect the participants' rights, dignity, and safety (Joungtrakul et al., 2025). This was done by obtaining the necessary permits from the government, research bodies, schools, organizations, and the research participants. During the informed consent process, participants were encouraged to ask questions or express any concerns about their participation. A clear protocol was established as outlined by Liamputtong (2020) to address any issues raised, ensuring that participants felt comfortable and informed throughout the research process. Consent forms were used to obtain consent from all the respondents in the research study. Consent was obtained from parents or guardians of the participating student minors by seeking support from the school administration to reach out to them.

The respondents were able to opt in or out of the study at any point in time if they so wished, as a measure to enhance autonomy and protect participants' welfare (Wiles et al., 2008). They were also informed of the study's purposes, benefits, and other possible risks so they could make an informed decision about whether to participate.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

This section presents the study's findings, based on data gathered from participants through interviews. The data were analysed using thematic analysis, and the results are organized by key themes. Data were collected from a recruited sample of 50 students, including 35 males and 15 females, representing a variety of academic levels and experiences. Forty percent of the students were in form three, 20% were in form two, 40% were in form four. Additionally, 20 teachers participated in the study, with a gender distribution of 12 females and 8 males. Teachers were selected based on their years of teaching experience, subjects taught, and their perceived effectiveness in maintaining student engagement.

4.2 Thematic Analysis Results

4.2.1 Coding Process

Through *NVivo* coding, the researcher recorded participants' exact words and expressions, minimizing bias and preserving the intended meanings participants attached to their experiences (Allsop et al., 2022). The process began with transcribing interviews from key participants in online music teaching and learning, which were then carefully checked and verified. In vivo codes were derived directly from participants' responses, highlighting essential ideas and concepts as they were understood by the participants.

NVivo coding facilitated the identification of nuanced insights into students' and teachers' experiences, with the terminology organized into preliminary subthemes. As the data analysis progressed, these initial subthemes were frequently revisited and refined, forming broader categories that were subsequently compared to identify patterns

and contrasts. For instance, expressions such as "I increased focus," "I had a better understanding," and "Distractions at home" were initially coded into categories like "Influence of Online Learning Environment" and "Challenges in Online Music Education." This iterative refinement allowed the themes to evolve dynamically, ensuring that they accurately reflected the data as more was gathered.

Throughout the analysis, the researcher consistently revisited and adjusted the codes and categories to align them with the research questions and objectives, embedding a rigorous, responsive process that clarified the core findings on the influence of online music education. These final themes – structured around concepts such as student engagement, skill development, technological integration, and teacher adaptability – provided a framework for organizing the analysis and discussion sections of the study, offering a context-rich understanding of online music education's effects on students' academic achievement. The *NVivo* coding process enabled the results to be illustrated directly through participant excerpts, giving readers an authentic perspective on the topic. The major themes identified from the data included: Influence on student engagement and participation; Development of music skills and creativity; Technological integration and adaptation; and Teacher adaptability and skill development.

4.2.3 Themes

Theme 1: Influence on Student Engagement and Participation

Table 5

Description of Theme 1

Sub-Categories	Descriptive	Examples from Respondents
Interactive tools	Online platforms offer various tools that make learning more engaging (e.g., quizzes, recorded lessons).	'Students got better test results since they were able to review the lessons that were recorded and given practice sessions at their own time and pace.'
Flexibility in learning	Students can access resources at their own time and pace, increasing control over learning.	'It was useful when I started doing better on music theory because I could get feedback on the assignments and quizzes immediately.'
Influence on Practical vs. Theoretical Learning	Students reported improvements in theoretical aspects, but challenges in practical skills development.	'While my practical skills were tested online, I felt that my theoretical knowledge improved due to the resources available.'

A key theme that emerged from both student and teacher interviews was the influence of using online teaching methods on student engagement and participation. As instruction transitioned from traditional face-to-face formats to online platforms, both benefits and challenges surfaced, altering the dynamics of student-teacher interactions. Interviews revealed that while online music education introduced innovative teaching modalities, it also presented distinct obstacles to maintaining focus and active participation.

One teacher noted, "Students seemed more engaged when we used interactive tools during the lessons, especially when we incorporated virtual instruments." This

observation suggests that technology can enhance engagement by introducing novel, hands-on ways for students to interact with music. Virtual instruments, for example, allowed students to experiment with and create music without physical instruments, fostering creativity in ways a conventional classroom setup might limit. The virtual settings also appear to be free, whereas the face-to-face imposes strict steps to follow; therefore, engagement seems enhanced in virtual settings. This technological integration, supported by 60% of the study's teachers, appeared to not only capture students' attention but also increase their sense of agency and enthusiasm for learning.

Similarly, one student commented, "I felt more connected with my teacher because we could chat directly during the lesson, but sometimes it was hard to stay focused at home." This statement highlights a dual effect: while real-time chat made it easier for students to connect with teachers and peers, the home environment often disrupted concentration. Among students aged 14-18 whose learning may be affected by competing demands at home, 58% reported struggling with distractions from mobile phones, household tasks, and other aspects of their daily routines. These distractions compromised students' focus, indicating that online platforms offer both improved access to teachers and heightened susceptibility to disengagement.

Another teacher observed, "Participation was higher when we used Zoom for live sessions because students were able to ask questions and interact in real time." The interactive nature of live Zoom sessions helped simulate the dynamic of an in-person classroom, where students could immediately voice questions and receive feedback. This immediacy fostered a responsive learning environment that kept 70% of students consistently engaged, and 30% oscillating between moderately engaged and inattentive, underscoring the importance of real-time interaction in maintaining involvement.

However, despite these advantages, some students expressed difficulty in staying attentive. One noted, "It was easy to lose concentration because of distractions like my phone or being at home, but the instant feedback helped me stay on track." Here, the student acknowledged that while prompt feedback was helpful, the home setting's lack of structured organization and supervision allowed distractions to interfere with learning, although lack of discipline and low levels of motivation could also have played a role. Such comments were common among students, with 65% indicating that they found it challenging to maintain focus without the traditional classroom's clear boundaries and minimized interruptions.

A further comment from a student "Sometimes, it felt like I was more of an observer than a participant because it was easy to zone out when I wasn't being directly addressed" points to an issue of passivity in online learning. This feeling of detachment arose especially when activities lacked interactivity or when the student was not personally involved in discussions. This response highlights the need for more targeted engagement strategies, as some students particularly those with less experience in independent learning struggled to participate actively when direct teacher engagement was absent.

Overall, these interviews provided a nuanced view of how OME influences student engagement and activity. While technology introduced new avenues for social and creative engagement, it also exposed limitations tied to the learning environment and students' self-regulation. The effectiveness of OME in fostering student engagement and creativity depended significantly on the specific tools and interactive strategies used, as well as on students' ability to manage home-based or environmental distractions.

Theme 2: Development of Music Skills and Creativity

Table 6

Description of Theme 2

Subcategories	Descriptives	Examples from Respondents
Digital resources and tools	Virtual instruments and music software open new avenues for creativity and exploration.	'Students were able to use virtual instruments and software to experiment with different sounds and compositions.'
Creativity enhancement	Online platforms allow for exploration of different music styles and compositions.	'Online classes exposed me to new ways of learning and created opportunities to experiment with different styles and techniques.'
Limitations of virtual learning	Lack of physical instruments and direct interaction with teachers poses challenges to hands-on skill development.	'I found it challenging to master practical skills without physical guidance and direct interaction with my teachers.'

One core theme from discussions with students and teachers was the influence of online music learning on the development of musical skills and on fostering creativity. The shift to a digital learning environment presented both new opportunities and challenges for nurturing musical development. One teacher observed, "Online music education has exposed students to new ways of learning, such as using virtual instruments and software that they wouldn't have encountered in a traditional classroom." This observation highlights how virtual tools enabled students to access a wider range of sounds and techniques, allowing them to explore different musical dimensions. This access seemed particularly valuable, as it enabled students to simulate and experiment with instruments that might otherwise have been too costly or unavailable, sparking their curiosity and encouraging experimentation. A student expressed a similar

sentiment, stating that "Learning online made me think outside the box because we had to create music using apps and programs we never used before." This comment reveals how the digital format encouraged students to adopt a more inventive approach to music-making. Confronted with new technology, students were driven to explore various platforms and functionalities, an experience that broadened their perspective on music creation and fostered a sense of creative adaptability.

Another teacher noted, "Students developed better technical skills because they had to record and edit their performances as part of the assignments." This statement emphasizes how recording and editing performances helped students gain technical music production skills. Engaging in tasks such as layering tracks or fine-tuning audio improved students' understanding of music composition and production, prompting them to assess and refine their work critically. This process, which 70% of students found challenging but rewarding, helped reinforce their technical skills while also offering a sense of independence in managing their projects.

One student illustrated this benefit, sharing, "It was challenging at first, but I think my playing improved because I could listen to my recordings and see what I needed to work on." By reviewing their recordings, students identified specific areas for improvement. This self-assessment process motivated students to focus on targeted practice, contributing to more meaningful, skill-based growth. For example, 65% of students reported becoming more attentive to rhythm and pitch after replaying and critiquing their performances.

Creativity was another area where online music education had a notable influence. A student shared, "Creating music online gave me more freedom to experiment with sounds and styles that I might not have tried in class." This sense of creative freedom allowed students to step outside traditional genre boundaries, experimenting with new

instruments and musical styles. Many students reported that the digital platform's flexibility enabled them to try genres and techniques they felt were unavailable or impractical in a typical classroom setting.

Teachers also observed a creative transformation among students, with one noting, "Students became more innovative because they had to find new ways to collaborate and create music without being in the same room." This comment reflects how students adapted to the challenges of virtual collaboration, fostering innovation in the absence of in-person rehearsals. For instance, 60% of students shared that online group projects encouraged them to try unique approaches to harmonizing and layering parts, expanding their creative problem-solving skills as they navigated the limitations of virtual collaboration.

However, there were challenges. One student said, "I missed playing with others in person, which made it harder to feel inspired sometimes." This statement underscores how the absence of a shared, physical learning environment hindered certain aspects of engagement and inspiration. While students could explore their creative potential online, many felt that the lack of direct, collaborative interactions affected their motivation and enthusiasm for creating music. While about 55% of students reported feeling isolated and missing the energy and immediate feedback they typically received in a traditional classroom, the remaining 45% either adapted positively to the remote learning setting or did not experience or report any challenges.

In conclusion, the interviews demonstrated that online music education introduced tools that expanded musical creativity and technical skills. However, the digital environment also posed significant challenges in sustaining the social and motivational aspects integral to musical learning. While students and teachers could adapt socio-musical practices in real-time online settings, many agreed that the absence of in-person

dynamics limited their ability to fully capture the communal, interactive aspects of music education typically found in face-to-face settings. These findings underscore that, though effective for individual skill development, online learning requires innovative strategies to enhance engagement and creativity in a more connected, collaborative way.

Theme 3: Technological, Integration and Adaptation

Table 7

Description of Theme 3

Sub-categories	Descriptives	Examples from Respondents
Technology tools and resources	Integration of software for music composition and recording expands learning opportunities.	"Using software for music composition and recording allowed students to experiment with their own creations."
Adaptation challenges	Both teachers and students face initial difficulties in adapting to new technologies.	"Although online tools are useful, adapting to new platforms and learning how to use them effectively took time and effort."
Influence of digital literacy	Levels of digital literacy vary, influencing how quickly and effectively individuals can adapt.	"Adapting to new technology was challenging at first, as it required significant changes in teaching methods."

The theme of technological integration and adaptation emerged prominently in the interviews. A significant focus of the research was on the schools' transition to online music instruction. The majority of the schools had adopted various elements of distance learning, with music being a key subject included in this transition. Zoom emerged as the preferred platform for lesson delivery and student engagement. When participants were asked why Zoom was favored as a virtual classroom tool, they cited its user-friendly interface, screen-sharing capability, and breakout room options, which are particularly

beneficial for interactive music instruction. The study successfully collected extensive qualitative data through narrative responses from both students and teachers. This data highlighted emerging themes and trends that provided deeper insights into how private secondary schools have adopted Zoom and other online platforms to facilitate music education.

The students and teachers discussed how they navigated the use of technology in online music education. This online shift prompted significant adaptation to both learning tools and instructional methods. One teacher noted, "Teachers were willing to adapt to new technology for music instruction, despite challenges at home." This quote underscores the commitment educators showed toward integrating digital tools, even as they faced personal and technical challenges. The shift to digital instruction allowed educators to explore new ways of engaging students, though it often required rapid adaptation to unfamiliar software. For instance, while 25% of teachers expressed readiness, 75% reported needing additional time to familiarize themselves with digital platforms such as music editing software and virtual instruments, which were essential to their online teaching efforts.

A student shared, "We used various apps and software for our lessons, which helped us learn new techniques and stay engaged." This highlights how technological tools positively influenced engagement by introducing interactive and innovative approaches. Students experienced increased access to creative music tools, with 68% reporting that these tools enabled them to explore unique sounds and effects unavailable in a physical classroom setting. This engagement was not limited to class hours; students often spent additional time independently experimenting with these tools, which enhanced their enthusiasm for learning music.

Another teacher observed, "Embracing technology in music education was effective in improving student skills, especially with software that supports music creation and analysis." This statement highlights the value of specialized software in developing students' technical skills. For example, software such as GarageBand and Soundtrap enabled students to compose and edit music, leading to a more practical, hands-on approach to music creation. Nearly 80% of students reported improved technical skills, particularly in recording and editing their music, which added depth to their understanding of the music production process and its application.

A student reflected on the influence of technology, stating, "I had to quickly adapt to using digital platforms for my lessons, but it allowed me to explore music in ways I hadn't before." This statement illustrates how adapting to new digital platforms enabled students to gain greater autonomy in learning, helping them discover aspects of music that might not have been feasible in a traditional classroom. For instance, they could experiment with digital layering and sampling – skills that 60% of students cited as helpful in expanding their musical creativity and adaptability.

Teachers also noted how digital tools enhanced feedback practices. One commented, "The integration of digital tools made it easier to provide personalized feedback to students, though it required learning new methods of assessment." This remark highlights how technology facilitated real-time, individualized feedback. Using video recordings, annotation features on digital scores, and online forums, teachers were able to provide detailed, student-specific feedback. For example, a teacher could annotate a student's submitted score or provide video commentary on a recorded performance, pointing out specific areas for improvement. As a result, students reported feeling more supported in their learning process, with 72% indicating that personalized feedback helped them understand their strengths and areas for improvement more clearly.

Yet, this new approach also presented challenges. Teachers had to rethink assessment strategies, as "face-to-face" performance evaluations were no longer possible in the same way. Instant feedback during physical lessons enabled immediate correction, but online assessments required new methods to measure engagement and progress fairly. This was a complex adjustment, as educators needed to evaluate engagement, track performance changes over time, and ensure assessments met educational standards. Many teachers reported the difficulty of this transition, with 55% noting that the lack of physical presence required them to rely more heavily on digital tools to track student engagement and monitor progress.

The necessity of adapting to these digital evaluation methods also underscored the ongoing professional development teachers needed to stay current in the digital age. They had to learn how to use various evaluation technologies to maintain high academic standards and fairness in assessments. Despite the learning curve, these adaptations ultimately facilitated students' achievement of course objectives and enhanced individual learning experiences by offering more tailored instruction.

In addition to practical benefits, the use of technology in feedback provision improved the rapport between teachers and students. Through digital tools, educators could foster a structured, engaging learning environment that kept students attentive and interested, even in a virtual setting. Many students noted that the personalized nature of feedback fostered a stronger connection with their instructors, making them feel more supported and motivated in their music education journey.

Theme 4: Teacher Adaptability and Skill Development

Table 8

Description of Theme 4

Sub-Categories	Descriptives	Examples from Respondents
Learning new tools	Teachers needed to learn digital tools to enhance their teaching methods.	"Initially, adapting to online platforms was challenging, but with time, I became more comfortable using various digital tools to enhance my lessons."
Professional growth	Online teaching led to the development of new skills, including digital music production and online communication.	"Online teaching has pushed me to develop new skills in digital music production and online communication."
Need for continuous training	Ongoing professional development is required to keep up with technological changes and improve teaching quality.	"The rapid pace of technological change made it hard to stay updated with the latest tools and techniques."

The theme of teacher adaptability and skill development was a significant focus in the interviews, with teachers discussing how they navigated the shift to online music education by acquiring new technological skills and adapting their teaching methods. This adaptability played a crucial role in maintaining student engagement and ensuring effective learning experiences. One teacher mentioned, "Teachers had to quickly adapt to new digital tools and platforms to deliver music lessons effectively." This highlights the necessity for educators to become proficient with technology to create a conducive learning environment online. This shift in teaching practice directly aligns with the study's objective to understand how teachers' adaptability influences student engagement in online music education. Another teacher shared, "We recorded tutorial

videos to demonstrate concepts for students, which was a new skill for many of us." Creating video content represented a significant change from traditional classroom teaching methods, requiring educators to engage with media production and video editing. This adaptation positively influenced student engagement, as video tutorials enabled students to revisit and review material at their own pace, reinforcing their understanding and fostering self-directed learning.

A student remarked, "My teacher improved in using online platforms over time, which made the lessons more engaging and effective." This student's observation reflects how teacher adaptability enhanced the learning experience, making lessons more interactive and accessible. Additionally, 70% of the students reported that their teachers' growing competence with digital tools kept them more engaged, as instructors were able to incorporate diverse media elements into lessons, such as digital sheet music and interactive music apps, which added variety and dynamism.

The shift to online education required teachers to address unfamiliarity with digital tools, limited resources, and the integration of new media platforms into music instruction. One teacher reflected, "We had to learn how to use new software and platforms quickly. It wasn't easy, but we knew it was necessary to provide our students with the best possible learning experience." Many teachers echoed this sentiment, indicating a strong commitment to improving their digital skills to meet students' needs. This aligns with the research questions, which focus on the influence of teacher adaptability on student learning outcomes, as educators took proactive steps to build the necessary skills for online instruction.

This commitment to professional development was evident in teachers' participation in training programs, webinars, and collaboration sessions with colleagues to share strategies for effective online teaching. Such engagement in continuous learning

demonstrates that many educators viewed technological proficiency as a critical component of teaching in a modern educational context. Teachers saw this transition not merely as an adaptation to an extraordinary situation but as an opportunity to develop lasting skills that would benefit both their students and their own professional growth.

Another teacher noted, "Our teacher's ability to adapt to new technologies really helped us understand the material better and stay motivated." This feedback underscores the influence of teachers' adaptability on student learning and motivation, as students perceived that their teachers' efforts to enhance their technical skills directly contributed to a more supportive and engaging learning environment. Students expressed appreciation for the tailored feedback made possible through digital tools, which allowed teachers to respond to recordings, annotate score sheets, and offer individualized guidance that may have been more difficult to achieve in a traditional classroom setting.

Moreover, the interviews revealed that many teachers viewed the mastery of digital tools and online teaching techniques as an essential skill set, vital for supporting students in an increasingly digital education landscape. By developing proficiency in video conferencing software, virtual instruments, and interactive platforms, teachers were better equipped to deliver lessons that engaged students, fostered creativity, and provided practical skills applicable to the digital music landscape.

Overall, the teachers' adaptability facilitated the effective integration of online tools in music instruction, positively influencing student learning and engagement. This adaptability not only helped students remain motivated in a virtual setting but also supported their creative exploration of music through digital resources. Teachers' commitment to ongoing learning and their willingness to adapt thus played a fundamental role in sustaining student interest and meeting educational objectives in online music education.

4.3 Discussion

4.3.1 Influence on Student Engagement and Participation

The theme of influences on students' engagement and participation concerns how shifting to online music education formats has affected students' engagement and passion in their music learning process. Thus, understanding how online environments influence students' connection to their studies is essential for assessing engagement and participation. Online learning settings may either hinder or enhance student involvement, influencing their motivation and the quality of their educational experience.

The integration of Tarkar's (2020) study effectively supports the analysis, but further elaboration could highlight how his findings align with the current study's observations. For instance, Tarkar discusses the role of interactive digital tools in fostering engagement, particularly through collaborative features that mimic in-person interactions. Similarly, participants in this study noted that tools like shared digital instruments and real-time feedback contributed to a sense of active involvement and immediate learning gratification. Adding specific examples from student and teacher feedback could further illustrate these points. For instance, one student described how virtual music apps enabled them to experiment with compositions in real time, a factor Tarkar (2020) also highlights as a motivating factor in digital learning environments. By drawing on these parallels, the alignment between Tarkar's conclusions and the study's findings becomes clearer, underscoring how thoughtfully designed online tools can help sustain and even boost student engagement in music education.

Face-to-face music learning has facilitated the introduction of several online tools and materials that can engage students. According to the views of teachers and students, it was found that, through the use of various online platforms, learning became more interactive and flexible or as one teacher noted, students got better test results since

they were able to review the lessons that were recorded and given practice sessions at their own time and pace.' Another student said it this way: "It was, for instance, useful when I started doing better on music theory because I can get the feedback on the assignments and quizzes immediately." This flexibility of tools encourages students' participation and feedback.

This aligns with the recent literature review, which shows how students' learning interests can be enhanced through the use of technology. A study by Tarkar (2020) highlights that if such features are embedded in students' work in the form of video tutorials and online feedback tools, students' motivation, interest, and engagement are likely to increase. These tools offer the advantage of allowing the user to learn at their own pace and to obtain immediate feedback from the materials being viewed – a factor that increases the likelihood of the user participating in the learning process. The theoretical construction provides meaning for the purpose of elaborating on how engagement is affected by the introduction of online learning.

On the one hand, flexibility and interactivity improve, as Tarkar (2020) mentioned; on the other hand, there are some challenges when implementing online learning. By comparing the strategies with Kotter's 8-step model of Change, one notices the importance of organizational guiding structures and a shared vision to sustain active cooperation, which is sometimes difficult to attain in online environments. Observed challenges included: The onset of COVID-19 forced teachers to adopt a new teaching style, as they cancelled augmented courses and switched to online teaching.

Teachers complained that the switch to online teaching made it harder for them to track student learning. Students also complained that it was difficult for them to be fully engaged with practical skills and participate online due to the capped time. These challenges relate to Kotter's stages of communication of vision and empowering

action, where structures should be provided to offer support and feedback, as engagement can also decrease in a virtual environment.

Despite the advantages, online music education has also posed challenges in maintaining consistent student engagement. Teachers and students noted that virtual learning environments sometimes led to reduced interaction and participation. One teacher noted that “online learning sometimes made it difficult to gauge student progress accurately,” highlighting the challenges of assessing, managing, and fostering engagement in a virtual setting. A student similarly commented, “While my practical music skills were tested online, I felt that my theoretical knowledge improved due to the resources and interactive tools available,” suggesting that engagement might vary across different aspects of the curriculum.

This observation is supported by the literature, which points to the shortcomings of online learning environments. Peng and Wang (2021) have claimed that face-to-face communication is not easily replaced and that its absence can hinder students' engagement and participation. Flexible schedules, the absence of feedback, and the presence of other distractions in an online environment can influence students' motivation.

Other factors, including access to technology and the reliability of the internet in private secondary schools in Nairobi County, Kenya, compound the dynamics. These contextual factors might hinder or promote the usefulness of the tools in increasing interaction, thereby influencing students' overall engagement. The difficulties observed in ensuring learners’ engagement may be compounded by differences in technology utilization and availability. Therefore, while online music education gives a good impression by engaging students through interactive features such as the internet, it also raises the question of how often students can be engaged.

Getenet et al. (2024) support the assertion that digital resources increase engagement and, at the same time, facilitate understanding of constrained learning in a virtual context. These are important to consider when designing online music education in private secondary schools in Kenya to enhance students' learning activities and their eagerness to learn more. This study examines unique contextual factors that influence engagement in Nairobi County's private schools, including variable internet access and socio-economic disparities, to highlight how these challenges shape student participation differently in this context.

4.3.2 Development of Music Skills and Creativity

Based on the theme of the development of music skills and creativity, the study examines how online music education affects students' acquisition of music skills and their levels of creativity. This theme is essential for establishing how the organization of the learning space affects students' development of musical skills, aptitude, and innovation in music learning, especially in the light of private secondary schools in Kenya.

Technological advancement has provided students with various gadgets for online music education, helping them hone their musical talent and be creative. According to interviews, teachers and students observed that digital resources contributed to skill development and creative exploration. One teacher noted that "students were able to use virtual instruments and software to experiment with different sounds and compositions," highlighting the role of technology in expanding students' musical horizons. Similarly, a student remarked, "Online classes exposed me to new ways of learning and created opportunities to experiment with different styles and techniques," reflecting the positive influence of online learning on creative expression.

A detailed examination of the specific skills students developed or struggled with provides a nuanced understanding of how online learning influences music education.

Many students initially faced challenges with technical skills like recording, editing, and mixing music independently. These skills required substantial adjustment, as students were unfamiliar with the self-directed aspects of producing music without immediate in-person guidance. For instance, one student shared, “At first, editing my recordings was tough. I wasn’t sure how to match tempos or adjust sound quality.” This reflects a common learning curve but also highlights the potential for growth in these technical areas once students adapt to the new tools.

Conversely, creativity and exploratory skills seemed to flourish in the online format, as students were exposed to digital resources and virtual instruments that offered new possibilities for sound experimentation. Jiang et al. (2022) emphasize this creative potential, noting that "the flexibility of digital platforms encourages students to explore diverse musical genres and techniques, fostering innovation." This flexibility aligns with student feedback in the current study, in which many reported a sense of freedom in trying new instruments and genres they might not have encountered in traditional classroom settings. For example, one student remarked, “Using virtual instruments allowed me to try sounds I’d never considered before, like electronic beats, which really broadened my perspective.”

Incorporating digital resources thus proved instrumental in fostering students’ creative capacities, enabling both technical skill-building and artistic exploration. This dual development – technical precision through hands-on practice and creative growth through exposure to diverse tools – underscores the complex yet rewarding landscape of online music education, highlighting both challenges and unique advantages for skill and creativity development.

The observations made in the current discussion can be supported by recent literature, which suggests that the use of online instruments and resources can greatly improve

music learning. For example, Jiang et al. (2022) have established the ability of software for teaching music and virtual instruments to technologically support several musical features and techniques available for practice, thus fostering students' better skills and creativity. The availability of various resources and opportunities to learn independently helps develop not only technical skills but also creative ones. Jiang et al. (2022) also note that, as observed in the literature, entering the virtual world not only teaches technical skills but also fosters creativity. However, it is equally important to remember Kotter's 8-Step Model, which states that one should delegate and remove all obstacles in their way. The findings show that the absence of physical instruments and of direct teacher guidance were reported as frequent limitations in online music learning. The respondents indicated that while online features might be efficient for theoretical tasks and brainstorming, they may not encourage students to develop the practical skills they needed to acquire through 'musical motors' as effectively as face-to-face lessons do.

Despite these benefits, online music education has also posed challenges in developing musical skills and creativity. Some teachers and students reported difficulties in achieving the same level of hands-on practice and spontaneous creative interactions as in traditional settings. One teacher mentioned, "While students could access a range of digital tools, the lack of physical instruments sometimes limited their ability to practice and develop technical skills effectively." A student echoed this concern, stating, "I found it challenging to master practical skills without physical guidance and direct interaction with my teachers."

These challenges are evident in the literature on the drawbacks of virtual learning environments, particularly their limited ability to provide a learning experience that simulates traditional music learning methods. Zhao and Watterston (2021) noted that online learning platforms might be ill-suited to providing as many haptic/sensory

interactions and immediate feedback as are important for tactical training and inspiration. Teaching could suffer from a lack of physical contact in terms of instructional assistance and practical session arrangements.

In Kenyan private secondary schools in Nairobi County, these dynamics are mediated by contextual factors, including access to technology and available digital resources. These variables may reduce the efficiency of using online tools for musical skill development and creative work, thereby affecting the quality of musical education. Further, cultural and infrastructural factors can influence the process and outcomes of online music teaching and learning among students.

Online music learning has the potential to develop musical skills and creativity through the use of available instruments. While these platforms create new ways to learn and practice, they make it hard to transfer hands-on skills from traditional classroom learning to the online format. As such, although these platforms open new avenues for learning and practice, there are difficulties in transferring the kinesthetic components of conventional classroom learning to them. This study examines the strengths and weaknesses of this learning environment and notes insights that can facilitate the enhancement of the music learning environment in private secondary schools in Nairobi County and Kenya in general. This understanding is crucial for developing appropriate approaches to online learning in music and for the learner's advancement.

The study highlights a unique digital adaptation in which students in Nairobi County secondary schools self-taught editing and overcame the challenges posed by the lack of physical instruments for music learning. It therefore offers unique insights that are not extensively documented in music education literature.

4.3.3 Technological Integration, and Adaptation

The theme focused on technological integration and adaptation addresses how well online music education integrates technology and how teachers and students adapt to these technological changes. This becomes a significant theme for recognizing the issues and accomplishments encountered in the use of technology in music teaching and learning in private secondary schools in Nairobi County, Kenya. Consequently, online music education has incorporated several technological resources and web-based support systems to boost learning. Both teachers and students identified several advantages of music technology and of technology integration in music education.

One teacher highlighted, "Using software for music composition and recording allowed students to experiment with their own creations and learn in new ways," indicating that technology-facilitated innovative approaches to music instruction. Similarly, a student noted, "The ability to use online resources and virtual instruments expanded my learning beyond traditional methods," reflecting the positive influence of digital tools on the learning experience.

The theme of technological integration and adaptation emerged prominently in discussions with both teachers and students, highlighting the challenges and innovations encountered in online music education. A significant challenge educators faced was the steep learning curve associated with new digital tools and platforms. For instance, one teacher recounted, "We had to familiarize ourselves with several new software applications in a short time, from video conferencing tools to music composition software, which was daunting." This statement reflects the broader struggle many educators face as they try to maintain effective instruction in a rapidly changing environment.

A specific example of this challenge is a high school music teacher who implemented online lessons using Zoom for instruction and GarageBand for music production. Initially, students struggled with GarageBand's interface, leading to confusion and frustration during assignments however, the teacher adapted by creating step-by-step tutorial videos to guide students through the software. This proactive approach not only helped students learn the technical skills required but also fostered a sense of community as they shared their compositions online.

In discussing the integration of digital tools, the concept of "haptic/sensory interactions" became relevant. Haptic interactions refer to the use of touch and motion in user interfaces that provide tactile feedback and enable engagement with digital instruments. In the context of online music education, these interactions can enhance the learning experience by providing students with a more immersive way to explore music creation. For instance, students using digital keyboards with touch-sensitive keys reported that the haptic feedback made them feel more connected to their music production, enhancing their overall engagement.

However, the reliance on technology also introduced certain disadvantages. For example, one student noted, "Sometimes, I miss the physical interaction of playing music with my classmates; it's not the same when we're all just on screens." This sentiment highlights the limitations of virtual environments, particularly regarding collaborative learning experiences that are often more enriching in a traditional classroom setting.To address these challenges, teachers engaged in professional development activities and shared best practices with colleagues. One educator emphasized, "We attended webinars on effective online teaching strategies, which helped us refine our approaches and incorporate more interactive elements into our lessons." By adapting their instructional methods, teachers were able to better support student engagement and learning outcomes, despite the

obstacles presented by technology.

The literature supports these observations by highlighting the potential of technology in learning. In this case, Wang and Qing (2023) opine that technology-enhanced learning resources, composition software, tutorials, and virtual instruments are most useful to students because they employ methods that students learning music may not be familiar with. With these tools, it is possible to provide a better and more fun way of approaching music teaching and learning towards different learning styles and abilities.

Wang and Qing (2023) have rightly pointed out that technology integration enhances flexibility and provides a better learning experience. Using technology in teaching might not be effective if users are not given sufficient support or encounter problems. This is more evident in conditions where resources and technical support are likely to be constrained. A lack of infrastructure support and differences in technological literacy among users can further complicate the challenges of technology adaptation. For instance, if the student is in an area with a poor internet connection, they may exploit this limitation and end up posting few or no posts in an online class, thereby reducing their interaction with the class.

Technology enhancement and adoption are the core of effective online music teaching and learning. Lewin's Change and Refreeze states describe the technological transition for students and teachers. Firstly, users are required to eliminate past practices and behaviors and start accepting the tool to which they are exposed. For instance, remarks such as ''When students are composing music with the help of certain software tools like some types of music recorders, they feel free to be creative'' indicate that online modes were transforming the ways of learning music.

Nonetheless, teachers and students faced challenges in mastering these technologies, especially in schools that relied on limited internet or technological infrastructure. Kotter's model also stresses the importance of establishing 'short-term' targets in change. In this context, small wins - like making a composition recording or getting great at a new Virtual instrument – can help with the process. But, as Wang and Qing (2023) rightly note, the process of adapting to new tools was frustrating, thus limiting long-term adoption. They raise the question of how the incorporation of technology in learning advances student performance, and the findings suggest that it has both negative and positive outcomes depending on how the learner and their teacher employ it.

The application and incorporation of technology in the online teaching of music also has strengths and limitations. The introduction of technology has made learning more interesting by offering new ways to approach musical concepts. However, there remain challenges surrounding the adoption of the new technology, as well as support for it. Previous work in the field of literature also underscores the need to incorporate appropriate training and support regimens that would enhance the impact of technology use in learning. Of these, the following is imperative for enhancing online music education in private secondary schools in Kenya. The study unearths unique teacher adaptations in Nairobi County secondary schools and thereby enriches the online music education literature. For instance, teachers created local tutorial videos and used WhatsApp for follow-up with students. These adaptations helped cope with minimal resources and are a unique addition to the literature on the subject.

4.3.4 Teacher Adaptability and Skill Development

The theme on strategies for teacher adaptability and skill development focuses on how teachers embed alterations in practice and teaching approaches, and on the use of these changes to form and develop teacher training and practice. In the context of online music

education in Kenya's private secondary schools, this theme is critical for understanding how teachers prepare to adapt to changes in integrating technology into teaching music and to develop the competencies required to support students. For instance, a teacher reflected, "After attending a workshop on online music instruction, I felt more prepared to create engaging lessons, but implementing those strategies effectively was a different challenge." This observation highlights the gap that can exist between knowledge acquisition and practical application.

To bridge this gap, ongoing support and training are essential. Effective professional development programs that could be implemented in Kenyan private secondary schools include peer mentoring initiatives in which experienced teachers guide less experienced colleagues in using digital tools. For instance, a mentorship program could pair teachers who excel in online teaching with those still developing their skills. This approach not only fosters collaboration but also builds a community of practice that encourages continuous improvement.

Another example could be the introduction of "Blended Learning Workshops," where teachers participate in hands-on training sessions focused on integrating digital tools into their pedagogy. Such workshops could include practical exercises, discussions on best practices, and opportunities to share successful strategies. Additionally, offering online courses or webinars on specific tools – like music composition software or interactive teaching platforms can provide teachers with the resources they need to enhance their skill sets. The findings indicate that while teachers faced significant challenges in adapting to online music education, their commitment to professional development and collaboration was key to overcoming these obstacles. By fostering an environment of continuous learning and support, educators can better navigate the complexities of digital instruction, ultimately leading to improved student learning outcomes.

Teachers in the study demonstrated varying levels of adaptability as they transitioned to online music education. Many educators reported having to quickly learn and integrate new digital tools into their teaching practices. One teacher noted, “Initially, adapting to online platforms was challenging, but with time, I became more comfortable using various digital tools to enhance my lessons.” This statement reflects the necessity for teachers to develop new competencies and adapt their instructional strategies to fit the online environment. Li et al. (2021) also highlighted that, to adopt technology in teaching, teachers have to be willing to change and acquire new knowledge. It therefore emphasizes that whereas teacher flexibility entails acquiring new knowledge of how to use technology in learning, it is also about learning to adapt teaching practices to digital learning environments.

The development of new skills through online teaching has been a central aspect of teachers’ experiences. Educators reported that online platforms provided opportunities for professional growth, including learning new digital tools and refining their instructional techniques. One teacher shared, “Online teaching has pushed me to develop new skills in digital music production and online communication, which has positively impacted my teaching methods.” This highlights how the shift to online education can lead to the acquisition of valuable skills that enhance both teaching and personal development.

Despite these positive aspects, teachers faced challenges in developing their skills. Some struggled with the technical aspects of new digital tools or found it difficult to keep up with rapidly evolving technologies. A teacher mentioned, “The rapid pace of technological change made it hard to stay updated with the latest tools and techniques.” This indicates that ongoing support and training are essential for helping teachers manage these challenges and continue their professional growth.

This is why the literature stresses that, to eliminate these barriers, professional development needs to be ongoing. Hash (2021) also noted that constant support and training are required for teachers to adopt new technologies into their teaching practice. If teachers do not undertake continuous professional development, the delivery of quality online education may be hampered by their failure to keep abreast of technological changes.

Lewin's and Kotter's models help place this theme. Lewin's model shows that before a teacher can embrace new forms of online tools, there is always the need to 'unfreeze' them, and this means overcoming the traditional methods of teaching. The change phase includes the process of learning the use of new teaching methods. Nevertheless, such changes may not become permanent, effective, or desired without continuous professional development and support, which have been promoted during the refreeze phase. Kotter's model provides an understanding of change and the ability to progress by learning from it to maintain the improvement. Several teachers said that, overall, online teaching made them adapt to challenges in digital music production, though they noted that technology is changing rapidly, which complicates matters. This highlights the importance of continuing professional development, which is a key factor in achieving the study's aim of establishing the effects of teachers' online facilities on students' performance.

In Kenyan private secondary schools in Nairobi County, factors such as the availability of support for professional development programs and materials that enhance teacher flexibility and skill development will determine their efficiency. Lack of training in certain regions may mean that educators are more likely to face challenges with skills enhancement and deployment for teaching music online.

It is vital for teachers to become adaptable and to learn the skills required for online teaching and learning. Overall, the introduction of new technologies in place of familiar digital tools suggests that the gains of professional development are positive but require constant support and coaching; otherwise, they pose the following challenges. The literature supports the norms of flexibility and capacity in improving the delivery of teaching practices and educational outcomes. It is significant to understand these factors to assist teachers in Kenyan private secondary schools as they adapt to online music instruction and the advancement of educational practice.

The study reveals how, despite little to no formal training, teachers in Nairobi County organically formed peer mentorship groups to help them adapt to the digital shift. This is a critical contribution to the literature, given that much of the existing literature focuses on structured and continuous professional development programmes, rather than grassroots-driven models that might be more practical in low-resource contexts, such as those in developing countries.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter synthesizes how online music education influences student engagement in secondary schools in Kenya, particularly in Nairobi County. It then proceeds to synthesize how the said medium of instruction and learning affects the development of practical skills in the subject, before also elaborating on the role of student attitudes in mediating the relationship between online music education and students' academic achievement. The discussion then transitions to teachers' capabilities in shaping academic outcomes in online music education. It then offers practical recommendations for enhancing online music education and suggests areas for future research to build on the findings and further enrich the literature on the specific subject.

In the organization, the chapter is structured into five main sections: a summary of findings, followed by conclusions. Recommendations follow: first, for online music education; then, for further research. In the final section, the chapter presents implications for policy and practice.

5.1.1 Influence of Online Music Learning on Student Engagement

The results show that online music learning influenced student engagement in selected private secondary schools in Nairobi County, Kenya. The findings indicated that students who enrolled in online music lessons were more active when these lessons included multimedia elements. One student shared, "Online classes with videos and quizzes helped me stay engaged and pay attention." However, there were challenges with interaction, particularly when lessons lacked effective teaching methods or when technology failed.

Such observations align with existing literature, which suggests that the extent to which online learning enhances student engagement depends on the interactivity of the content provided. For instance, Li et al. (2021) highlighted that online learning platforms featuring quizzes, videos, and feedback from both students and instructors effectively capture students' attention. Conversely, Wang and Qing (2023) found that limited interactions during online lessons led to lower student engagement, emphasizing the importance of active participation in the learning process.

5.1.2 Online Music Learning and Practical Skills Development

The study reveals challenges in practical skills development among private secondary students in Nairobi County due to online music learning. While students demonstrated improved theoretical understanding of music, they struggled to apply it in practice. For instance, one teacher noted, “During the pandemic, my students could not practice instruments as they used to in class.” This sentiment was echoed by several students, with one stating, “I find it difficult to learn when the lessons are delivered online.”

Specific challenges included difficulties in mastering instruments like the guitar and piano, as well as essential skills such as sight-reading and rhythm exercises. The online format hindered students' ability to physically engage with their instruments and receive immediate, tactile feedback from their teachers and peers. This aligns with the existing literature, which indicates that developing practical skills in an online learning environment is particularly challenging due to the lack of hands-on experience. Shaw and Mayo (2022) emphasized that music students benefit from physically interacting with their instruments and receiving direct guidance from instructors. In their study, they found that the lack of such experiences in online settings leads to inadequate skill execution among students. Consequently, the lack of practical engagement and feedback in online music education contributes to students' difficulties in translating their

theoretical knowledge into practice.

5.1.3 Students' Attitudes Towards Online Music Education and Academic Performance

The findings of the study indicate that students' attitudes towards online music education influenced their academic performance. Those with a positive outlook on online learning tended to perform better, particularly in the theoretical aspects of music education. For instance, one student shared, "I came in with some doubts, but after some time, I began to like it, and my performance in music theory class improved." This improvement in grades was especially evident among students who actively engaged with the online platform.

Conversely, many students who were skeptical or resistant to the new learning model often struggled academically, with poor grades, difficulty concentrating, and failure to submit assignments on time. This pattern illustrates how positive attitudes can enhance engagement and, consequently, academic performance metrics. These findings align with existing research on students' attitudes towards online learning, which suggests that these attitudes play a crucial role in determining success. Kibici and Sarikaya (2021) highlighted that a positive perception of online education consistently predicts higher levels of interaction with course material and improved academic outcomes. Similarly, Kasendere et al. (2020) noted that a student's attitude towards online learning can either enhance or diminish their performance. By measuring attitudes through surveys and performance metrics, this study contributes to the growing body of literature highlighting the critical link between students' attitudes and academic success in online learning environments.

5.1.4 Teachers' Capabilities in Online Music Education and Academic Performance

Teachers' competence in delivering online music education also affected students' academic performance. Those who effectively mastered technology and associated instructional strategies provided a better learning experience, resulting in improved student outcomes. For example, one teacher stated, "I had to learn new software and change the way I taught, and it helped. My students' grades went up." This highlights how adaptability in teaching methods can lead to tangible improvements in student performance.

Conversely, teachers who struggled with online tools often lost connection with their students, making it challenging to maintain the academic standards typically found in traditional classrooms. For instance, another teacher reflected, "I found it hard to keep my students engaged with the online format; many of them fell behind." Such experiences illustrate the critical role that teacher capability plays in online education. These findings align with the existing literature, which emphasizes the importance of teacher proficiency in online learning environments. Akombo (2022) notes that teachers who are adept at using online teaching technologies are generally more effective in enhancing student performance. Furthermore, Shaw and Mayo (2023) underscore the significance of ongoing teacher training and professional development in online education. They argue that well-prepared educators are essential to the success of online music programs and to students' overall academic achievement.

5.2 Recommendations

5.2.1 Recommendations for Music Learning

Based on the findings of this study, several recommendations can be made to enhance the effectiveness of online music learning in private secondary schools in Nairobi County, Kenya.

Several important findings include that student engagement improved when music lessons were delivered virtually, especially when courses incorporated multimedia elements. To maintain and promote such interest, schools should incorporate professional learning management systems with features such as videos, quizzes, and feedback options. The use of multimedia as an aid to learning should also be encouraged among teachers, so that they can use different multimedia tools to facilitate lessons. Besides, more formal and less formal interactions should be planned and held so that students can remain involved and engaged.

Since teachers' competencies in online education are critical to students' achievement, schools should consider professional development for music teachers. The training should encompass not only awareness of how to use virtual classroom platforms and various cognizant tools (for instance, web-conferencing systems, messaging systems, document-sharing systems), but also the different teaching methods and instructional approaches suitable for a virtual classroom. Some options schools could provide to their employees include seminars and training sessions with internet music instructors to help them develop their knowledge and incorporate modern approaches and instruments.

The research also established that online music learning offered prospects for developing teamwork and collaboration among students, though it may not go to the extent expected. To achieve this, a teacher has a responsibility to provide assignments and/or projects that foster teamwork in virtual teams. Such group activities include group performances using music collaboration tools, discussion forums, and group video conferencing, where tools such as music collaboration software, online forums, and group video calls should be used. To increase interaction, one can also foster peer feedback and the use of learners' discussions in collaborative learning.

These findings highlighted the need to ensure that technology is well incorporated within online music instruction. It is equally important that schools continue to embrace more of these technologies to promote learning, student achievement, and inclusivity. It can involve using AI-enhanced applications for individual learning, adopting learning technologies that help students learn in the way that suits them, and incorporating software that enables the teacher to perform an instant check of students' work.

5.2.2 Recommendations for Further Research

Further research should be conducted to compare the effects of online and conventional face-to-face instrumental music instruction in private secondary schools. This research could potentially compare how students participate in the classroom, how they acquire practical skills, their imagination, and their academic accomplishments. It was observed that awareness of the advantages and disadvantages of each modality may reveal that a combination of face-to-face delivery and blended learning is the most effective way to teach. Longitudinal studies that follow students for several years after participation in online music education are currently lacking.

More such research should follow students for several years to determine the effects of continuous online learning on students' music skills, creativity, and performance. This would provide a better understanding of the efficiency and viability of online music education. Future research should therefore investigate the efficiency of the different technological tools and media that may be used in online-based music learning. This includes assessing various virtual musical instruments, including music-composing software, and examining learning environments and the possibilities of pioneering technologies such as virtual reality (VR) and augmented reality (AR). Studies in this sector would assist in selecting and implementing the most appropriate instruments to improve the teaching of the music subject in private secondary institutions.

REFERENCES

Adam, T.B., & Metljak, M. (2022). Experiences in distance education and practical use of ICT during the COVID-19 epidemic among Slovenian primary school music teachers with different professional experiences. *Social Sciences & Humanities Open, 5*(1), 1- 9.

Adarkwah, M. A. (2021). A strategic approach to onsite learning in the era of SARS-CoV-2. *SN Computer Science, 2*(4), 258–258. https://doi.org/10.1007/s42979-021-00664-y.

ADEA (2020). Delivering education at home in African member states amid the COVID-19 pandemic. Country status report. Retrieved from http://www. adeanet.org/sites/default/files/report_education_at_home_covid-19.pdf

Adhiambo, A.O. (2021). *Inclusion of Kenyan popular music in secondary school music curriculum: A study of selected schools in Vihiga county, Kenya.* Master's Thesis, Kabarak University.

Agarwal, A., Bansal, K. M., Gupta, A., & Khurana, R. (2021). Online education: A booming product for institutes post-COVID-19? *Marketing Education Review, 31*(3), 262–272. https://doi.org/10.1080/10528008.2021.1958346

Ahmed, S. K. (2025). Sample size for saturation in qualitative research: Debates, definitions, and strategies. *Journal of Medicine, Surgery, and Public Health*, *5*, 100171. https://doi.org/10.1016/j.glmedi.2024.100171

Akarsu, S. (2021). Investigating Secondary School Music Teachers' Views about Online Music Lessons during the COVID-19 Pandemic. *Educational Policy Analysis and Strategic Research*, *16*(2), 160-178. https://files.eric.ed.gov/fu lltext/E J130 1886.pdf

Akombo, B.A. (2022). The impact of COVID-19 on music pedagogy in Kenya: A questionnaire study. *Lessons from Global Classrooms, 1*: 1-14.

Allsop, D. B., Chelladurai, J. M., Kimball, E. R., Marks, L. D., & Hendricks, J. J. (2022).

Qualitative methods with Nvivo software: A practical guide for analyzing qualitative data. *Psych, 4*(2), 142-159. https://doi.org/10.3390/psych4020013

Ayton, D., & Tsindos, T. (2023). Foundations of qualitative research–paradigms, philosophical underpinnings. *Qualitative Research–a practical guide for health and social care researchers and practitioners*. https://oercoll ective.caul. edu.au /quali tative-research/chapter/unknown-2/

Ayyıldız, E. B., & Zahal, O. (2022). Instructor experiences with online guitar lessons during the Covid-19 pandemic in Turkey. *International Journal of Music Education*, 1-13.

Bautista, A., Yeung, J., McLaren, M.L., & Ilari, B. (2022). Music in early childhood teacher education: Raising awareness of a worrisome reality and proposing strategies to move forward. *Arts Education Policy Review*, 1-11.

Bonell, C., Humphrey, N., Singh, I., Viner, R. M., & Ford, T. (2023). Approaches to consent in public health research in secondary schools. *BMJ open*, *13*(6), e070277. https://doi.org/10.1136/bmjopen-2022-070277

Botstein, L. (2019). The Future of Music in America: The Challenge of COVID-19 Pandemic. *The Musical Quarterly*, *102*(4), 351–360.

Bradley, E. H., Curry, L. A., & Devers, K. J. (2007). Qualitative data analysis for health services research: developing taxonomy, themes, and theory. *Health services research*, *42*(4), 1758-1772. https://doi.org/10.1111/j.1475-6773.2006.00684.x

Cahaya, A., Yusriadi, Y., & Gheisari, A. (2022). Transformation of the Education Sector during the COVID-19 Pandemic in Indonesia. *Education Research International*, *2022*, 1–8. https://doi.org/10.1155/2022/8561759.

Calderón-Garrido, D., Gustems-Carnicer, J., & Faure-Carvallo, A. (2021). Adaptations in conservatories and music schools in Spain during the COVID-19 pandemic.

International Journal of Instruction, *14*(4), 451–462. https://doi.org/ 10.2933 3/iji.20 21. 14427a.

Cheruiyot, B., & Jelimo, J. (2025). Effect of teachers' lifelong learning behaviours and digital literacy: A literature synthesis. *African Quarterly Social Science Review*, *2*(2), 409-414. https://doi.org/10.51867/AQSSR.2.2.35

Creswell, J. W., & Creswell, J. D. (2018). Research design: Qualitative, quantitative, and mixed methods approach (5th ed.). SAGE Publications.

Cucinotta, D., & Vanelli, M. (2020). WHO declares COVID-19 a pandemic. *Acta bio-medica: AteneiParmensis*, *91*(1), 157–160. https://doi.o rg/10.237 50/abm.v 91i1.9397

Daubney, A., & Fautley, M. (2020). Editorial Research: Music education in a time of the pandemic. *British Journal of Music Education*, 37(2), 107-114.

De Bruin, L. R. (2021). Instrumental music educators in a COVID landscape: areassertion of relationality and connection in teaching practice. *Frontiers in Psychology*, *11*, 624717. https://pmc.ncbi.nlm.nih.gov/articles/PMC7840537/

Dworkin, S. L. (2012). Sample Size Policy for Qualitative Studies Using In-Depth Interviews. *Archives of Sexual Behavior*, *41*(6), 1319–1320 https://doi.org/1 0.1007/s105 08-012-0016-6

Feifei, L., Kian, M. W., & Adaikalam, J. (2022). A review of service quality dimensions in higher education sector and research prospects after the COVID-19 pandemic. *International Journal of Academic Research in Business and Social Sciences*, *12*(1), 328-337 https://doi.org/10.6007/IJARBSS/v12-i1/12052.

Frey, J. H., & Fontana, A. (1991). The group interview in social research. *The social Science Journal*, *28*(2), 175-187. https://doi.org/10.1016/0362-3319(91)90003-M

Getenet, S., Cantle, R., Redmond, P., & Albion, P. (2024). Students' digital technology attitude, literacy and self-efficacy and their effect on online learning engagement. *International Journal of Educational Technology in Higher Education*, *21*(1), 3. https://doi.org/10.1186/s41239-023-00437-y

Gül, G. (2021). Teachers' views on music education practices in secondary education in distance education during the COVID-19 pandemic process. *Journal of Education in Black Sea Region*, *6*(2), 95-111. https://doi.org/10.3 1578/jebs.v6 i2.235.

Hansson, P.O. (2021). Teaching practice online: Challenges in Japan, India and Kenya under pandemic. *IAFOR Journal of Education*, *9*(2), 77–91. https://doi.org /10.22492/ije.9.2.05.

Hash, P. M. (2021). Remote learning in school bands during the COVID-19 shutdown. *Journal of Research in Music Education*, *68*(4), 381-397.

Huang, X., Deng, Y., Ge, P., Sun, X., Huang, M., Chen, H., Wang, Y., Suo, B., Song, Z., & Wu, Y. (2022). College Students' Degree of Support for Online Learning during the COVID-19 Pandemic and Associated Factors: A Cross-Sectional Study. *International Journal of Environmental Research and Public Health*, *19*(24), 1-16.

Hussain, S. T., Lei, S., Akram, T., Haider, M. J., Hussain, S. H., & Ali, M. (2018). Kurt Lewin's change model: A critical review of the role of leadership and employee involvement in organizational change. *Journal of Innovation & Knowledge*, 3(3), 123–127. https://doi.org/10.1016/j.jik.2016.07.002

Ignacio, A. I. Jr., & Paras, P. (2024). A critical analysis of epistemological and ontological assumptions in constructivism. In *Building Resiliency in Higher Education: Globalization, Digital Skills, and Student Wellness* (pp. 1–20). IGI Global. https://doi.org/10.4018/979-8-3693-5483-4.ch001

Jiang, B., Li, X., Liu, S., Hao, C., Zhang, G., & Lin, Q. (2022). Experience of online learning from COVID-19: Preparing for the future of digital transformation in education. *International Journal of Environmental Research and Public Health*, *19*(24), 1-18.

Joseph, D., & Merrick, B. (2021). Australian music teachers' reflections and concerns during the pandemic: Resetting the use of technologies in 21st-century classroom practice. *New Zealand Journal of Teachers' Work, 18*(2): 109-126.

Joungtrakul, J., Dullayaphut, P., Anantanand, S., & Someran, L. (2025). Research ethics: Protecting the privacy of participants in qualitative research. *Journal of Humanities, Social Sciences, and Arts, 7*(1), 91–105. Retrieved from https:// so03. tci- thaijo.org/index.php/hsa/article/view/277926

Kaiser, K. (2009). Protecting respondent confidentiality in qualitative research. *Qualitative health research*, *19*(11), 1632-1641. https://doi.org /10.1177/10 49732309350879

Kesendere, Y., Sakin, A. S., & Acar, A. K. (2020). Educators' views on online/distance violin education during the COVID-19 outbreak term. *Journal for the Interdisciplinary Art and Education, 1*(1), 1-19. https://doi.org/10.29228/jiae.1.

Kibici, V. B. & Sarıkaya, M. (2021). Readiness levels of music teachers for online learning during the COVID-19 pandemic. *International Journal of Technology in Education (IJTE), 4*(3), 501-515.https://doi.org/10.46328/ijte.192.

Kibuku, R. N., Ochieng, P. D. O., & Wausi, P. A. N. (2020). e-Learning challenges faced by universities in Kenya: A literature review. *Electronic Journal of e-Learning*, *18*(2), 150–161. https://doi.org/10.34190/EJEL.20.18.2.004.

Kilincer, O. (2021). An investigation of pre-service music teachers' attitudes towards online learning during the COVID-19 pandemic. *International Journal of Technology in Education and Science* (IJTES), *5*(4), 587-600. https://doi.org/10 .46328/ijt es.304.

Kotter, J. P. (2007). Leading change: Why transformation efforts fail. In *Museum management and marketing* (pp. 20-29). Routledge. https://irp- cdn.multiscreensite.com/6e5 efd05/files/uploaded/Leading%20Change.pdf

Leavy, P. (2017). *Research Design: Quantitative, Qualitative, Mixed Methods, Arts-Based, and Community-Based Participatory Research Approaches* (1st ed.). The Guilford Press.

Lewin, K. (1947). Frontiers in group dynamics: Concept, method and reality in social science; social equilibria and social change. *Human relations, 1*(1), 5-41. https://edbatista.typepad.com/files/frontiers-in-group-dynamics-kurt-lewin.pdf

Lewis, J. (2009). *Redefining qualitative methods: Believability in the fifth moment. International Journal of Qualitative Methods, 8*(2). https://doi.org/ 10.1177/ 160940690900800201

Li, Q., Li, Z., & Han, J. (2021). A hybrid learning pedagogy for surmounting the challenges of the COVID-19 pandemic in performing arts education. *Education and Information Technologies, 26*(6), 7635–7655. https://doi.o rg/10.1 007/s10 639-021-10612-1.

Liamputtong, P. (2020). *Qualitative research methods* (5th ed.). Oxford University Press.

Mabeya, M. T. (2020). Distance learning during the COVID-19 crisis: Primary and secondary school parents' experiences in Kenya. *East African Journal of Education Studies, 2*(1), 173-186.

MacRitchie, J., Chmiel, A., Radnan, M., Taylor, J. R., & Dean, R. T. (2023). Going online: Successes and challenges in delivering group music instrument and aural learning for older adult novices during the COVID-19 pandemic. *Musicae Scientiae, 27*(3), 596- 615. http://dx.doi.org/10.1177/10298649221097953

Merriam, S. B. (2009). *Qualitative Research: A Guide to Design and Implementation* (3rd ed.). Jossey-Bass.

Mhlanga, D. (2021). The fourth industrial revolution and COVID-19 pandemic in South Africa: The opportunities and challenges of introducing blended learning in education. *Journal of African Education, 2*(2), 15–42. https://doi.o rg/10.3 1920/2 633- 2930/2021/v2n2a1.

Mocănașu, D. R. (2020). Determining the sample size in qualitative research.

In *International multidisciplinary scientific conference on the dialogue between sciences & arts, religion & education* (Vol. 4, No. 1, pp. 181-187). Ideas Forum Internati onal Academic and Scientific Association. http://dx.doi. org/10.2 6520/m cdsare.20 20.4.181-187

Ndayisenga, J. P., Oudshoorn, A., Mukamana, D., Babenko-Mould, Y., Jackson, K. T., & Hynie, M. (2024). A reflection on ethical and methodological challenges encountered during a critical ethnographic study with various Rwandan society members on unintended adolescent pregnancies. *Discover Public Health, 21*(1), 84. http://dx.doi.org/10.1186/s12982-024-00210-0

Neris, R. R., Papathanassoglou, E., Leite, A. C. A. B., Garcia-Vivar, C., DeMontigny, F., & Nascimento, L. C. (2023). Five tips for conducting remote qualitative data collection in COVID times: Theoretical and pragmatic considerations. *Revista da Escola de Enfermagem da USP*, *57*, e20220277. https://doi.org/10.1590/1980-220X-REEUSP- 2022-0277en

Noor, S., Tajik, O., & Golzar, J. (2022). Simple random sampling. *International Journal of Education & Language Studies*, *1*(2), 78-82. https://doi.org /10.22 034/ ijels.2022.162982

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). *Thematic analysis: Striving to meet the trustworthiness criteria*. *International Journal of Qualitative Methods, 16*, 1–13. https://doi.org/10.1177/1609406917733847

Nusiratt, N., Alsawalqa, R.O., Fakhouri, H. & Hamad, F. (2022). Music students' perception towards music distance learning education during the COVID-19 pandemic: Cross-sectional study in Jordan. *International Journal of Interactive Mobile Technologies, 16*(06), 135-138.

O'Dea, X. C., & Stern, J. (2022). Virtually the same? Online higher education in the post-COVID-19 era. *British Journal of Educational Technology, 53*(3), 437–442. https://doi.org/10.1111/bjet.13211

Octaviani, K.S. (2021). Music education in the COVID-19 pandemic: Challenges of distance learning and digital platforms. *Advances in Social Science, Education and Humanities Research, 552:* 146-149.

OECD (2021). The state of global education: 18 months into the pandemic.

Ofsted (2020). COVID-19 series: briefing on schools, November 2020. Crown Copyright.

Olawale, S. R., Chinagozi, O. G., & Joe, O. N. (2023). Exploratory research design in management science: A review of literature on conduct and application. *International Journal of Research and Innovation in Social Science*, *7*(4), 1384-1395. https://doi.org/10.47772/IJRISS.2023.7515

Osabwa, W. (2022). Coming to terms with COVID-19 reality in the context of Africa's higher education: Challenges, insights, and prospects. *Frontiers in Education (Lausanne), 7,* 1-7. https://doi.org/10.3389/feduc.2022.643162.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and policy in mental health and mental health services research*, *42*(5), 533-544. https://doi.org/10.1007/s10488-013- 0528-y

Patton, M. Q. (2015). Philosophical assumptions and interpretive frameworks. In *Qualitative Research & Evaluation Methods* (4th ed., pp. 33–49). SAGE. Patton, M.Q.(2015).https://engagementscholarship.org/upload/eesw/2022/2-7%20Creswell%20_%20Poth%20(2018)%20Philosophical%20Assumptions%20and %20Interpretive%20Frameworks.pdf

Peng, W., & Wang, S. (2022). Online-Offline Teaching for Bio-Pharmaceutical Students During the COVID-19 Pandemic: The case study of advanced mathematics in application-Oriented Universities of China. *Frontiers in Public Health, 10,* 1-10. https://doi.org/10.3389/fpubh.2022.911117.

Pozo, J.I., Echeverria, M.P., Casas-Mas, A., Lopez-Iniguez, G., Cabellos, B., Mendez, E., Torrado, J.A. & Bano, L. (2022). Teaching and learning musical instruments through ICT: The impact of the COVID-19 pandemic lockdown. *CellPress,* 1-9.

Presser, S., Couper, M. P., Jt, L., Martin, E. C., Martin, J. P., Rothgeb, J. M., & Singer,

E. (2004).Methods for Testing and Evaluating Survey Questions. *Public Opinion Quarterly*, *68*(1), 109–130. https://doi.org/10.1093/poq/nfh008

Regional Directorate of Education – Nairobi County (2023).

Roller, M. (2015). Qualitative research design. *Gloucester, VA: Roller Marketing*, *104.*

Rosset, M., Baumann, E. & Altenmuller, E. (2021). Studying music during the coronavirus pandemic: Conditions of studying and health-related challenges. *Frontiers in Psychology, 12:* 1-11.

Rucsanda, M. D., Belibou, A., & Cazan, A. M. (2021). Students' attitudes toward online music education during the COVID-19 lockdown. *Frontiers in Psychology*, *12*, 753-785.

Schiavio, A., Biasutti, M., & Philippe, R.A. (2021). Creative pedagogies in the time of pandemic: A case study with conservatory students. *Music Education Research, 23*(2): 167-178.

Shaw, R. D., & Mayo, W. (2022). Music education and distance learning during COVID-19: A survey. *Arts Education Policy Review, 123*(3), 143–152. https://doi.org/ 10.1080/10632913.2021.1931597.

Soudien, C., Reddy, V., & Harvey, J. (2022). "The impact of COVID-19 on a fragile education system: The case of South Africa." In: Reimers F. M. (eds) Primary and Secondary Education During Covid-19. Cham.

Tarkar, P. (2020). Impact of the COVID-19 pandemic on the education system. *International Journal of Advanced Science and Technology, 29*(9), 3812-3814.

Thorgersen, K. A., & Mars, A. (2021). A pandemic as the mother of invention? Collegial online collaboration to cope with the COVID-19 pandemic. *Music Education Research, 23*(2), 225- 240. https://doi.org/10.1080/14613808.2021.1906216.

Thornton, L. (2020). Music education at a distance. *Journal of Music Teacher Education, 29*(3), 3–6.

United Nations (2020). Education during COVID-19 and beyond. UN Policy Briefs, 2020.

Uwezo (2020). Are our children learning? The status of remote-learning among school-going children in Kenya during the Covid-19 crisis. Usawa Agenda.

Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing & health sciences*, *15*(3), 398-405. https://doi.org/10.1111/nhs.12048

Ververis, A., & Apostolis, A. (2020). Online music education in the era of COVID-19: Teaching instruments in public music secondary schools of Greece during the 2020 lockdown. *Proceedings of ICSES*, 1-9. https:// www.academia.e du/4506 0978/Online_Music_Education_in_the_Era_of_COVID_19_Teaching_Instruments _in_Public_Music_Secondary_Schools_of_Greece_During_the_2020_Lockdown

Wang, G., & Qing, X. (2023). Analyzing online and offline mixed teaching models for university students during and after COVID-19. *Interactive Learning Environments, (ahead-of-print)1-* 16. https://doi.org/10.1 080/10494820. 2022.21 27781.

Wentworth, D. K., Behson, S. J., & Kelley, C. L. (2018). Implementing a new student evaluation of the Teaching System using the Kotter change model. Studies in Higher Education, 45(3), 511–523.https://do i.org/10.108 0/03075 079.20 18.1544234

Wiles, R., Crow, G., Heath, S., & Charles, V. (2008). The management of confidentiality and anonymity in social research. *International journal of social research methodology*, *11*(5), 417-428. http://dx.doi.org/10.1080/13645570701622231

Williams, K. (2021). ISM global literature review: Music performance, education and COVID-19. *ISM.*

Xie, X., Siau, K., & Nah, F. F.-H. (2020). COVID-19 pandemic - online education in the new normal and the next normal. *Journal of Information Technology Cases and Applications*, *22*(3), 175– 187. https://doi.org/10.1080/15228053.2020.1824884.

Yildiz, Y., Karsal, E., & Bagci, H. (2021). Examining the instructor's perspectives on undergraduate distance learning music instrument education during the COVID-19 pandemic. *Journal of Pedagogical Research, 5*(2), 184-206.

Yılmaz, H., Sakarya, G., Gayretlı, S., & Zahal, O. (2021). COVID-19 and online music education: a qualitative study on the views of preschool teacher candidates. *Eğitimde Nitel Araştırmalar Dergisi*, (28), 283-299. https://doi. org/10.1 4689/enad.28.12

Yin, R. K. (2015). *Qualitative Research from Start to Finish* (Second). The Guilford Press.

Yusuff, A.A., Shahzad, A., Elhachemi, T., & Daniyan-Bagudur, H. (2022). The impacts of integrated e-Learning system on the challenges facing the education sector during and post Covid-19 pandemic. *Journal of e-Learning and Knowledge Society*, *18*(1), 34-44. https://doi.org/10.20368/1971-8829/1135385.

Zhao, Y. & Watterston, J. (2021). The changes we need: Education post-COVID-19. *Journal of Educational Change, 22,* 3-12.

APPENDICES

Appendix I: Interview Survey

Personal Information

Age: **Sex:** **Education level:** **School: Ethnicity:**

Section A: Student Engagement

1. Does online music education encourage teamwork among the private secondary school learners? .....
2. Do the virtual instruction methods allow room for feedback and asking clarification from the students to their teachers?
   …….....
3. Does online music learning lead to more or less student concentration during the learning process?
   …….....
4. Does music learning via online means generate mastery of music content?.....

Section B: Skill Development

1. How does online music education influence creating music for private secondary school students? .....
   .....
2. How has online learning affected your practical music skills at the secondary school level? …….....
   .....
3. Does online music education enable the generation of technical and aural music skills while learning music? …….....
   .....

Section C: Students' Attitude

1. Were you willing to change to online learning, and how did it affect music students' performance?.....

2. Based on your experience, what made online music education effective or ineffective?.....

3. Were teachers willing to adapt to the new technology for teaching music after adoption of the online instruction methods?.....

4. Do you like the online music education system? How has it influenced your music learning journey?.....

Section D: Teachers' Capabilities

1. Has online music learning resulted in student competence in intellectual and practical knowledge capabilities in music education? …….....

2. How easy is it for teachers to use technology to support music education?

3. Do teachers feel prepared for the current online music education?.....

Section E: Music Students' Academic Performance

1. How does online music education contribute to the practical academic music performance of secondary school learners?.....

2. Does online learning enhance creativity, aural, and practical music skills? .....

3. How does online learning influence test scores for music students?.....

Appendix I1: Informed Consent Form

KABARAK UNIVERSITY RESEARCH ETHICS COMMITTEE

ADULT INFORMED CONSENT FORM

STUDY TITLE: Influence of Online Music Education on Academic Performance of Music Students in Selected Private Secondary Schools in Kenya

PI: Kevin Kianda Mwit_____Affiliated Institution: Kabarak University

Co-investigator(s): N/A_____Affiliated Institution(s): N/A

Introduction

You are invited to participate in this research study being undertaken by the above-listed investigators. This form will help you gather information about the study so that you can voluntarily decide whether you want to participate or not. You are encouraged to ask any questions regarding the research process, as well as any benefits or risks that you may accrue by participating. After you have been adequately informed about the study, you will be requested to either agree or decline to participate. Upon agreeing to participate in the study, you will be further requested to affirm that by appending your signature/thumbprint on this form. Accepting or declining to participate in this study does not in any way waive the following rights, which you're entitled to:

a. Voluntary participation in the study;
b. Withdrawing from the study at any time without the obligation of having to give an explanation and;
c. Access to services that you're entitled to

A copy of this form will be provided to you for your own records Should I continue?

YES/NO _____

This study has been reviewed and approved by Kabarak University Research Ethics Committee (KUREC)

What is the Purpose of the Study?

The main reason(s) for conducting this study are to answer the following questions:

i. What is the influence of online music learning on student engagement in selected private secondary schools in Nairobi County, Kenya?
ii. How does online music learning affect the practical skills development of private secondary students in Nairobi County, Kenya?
iii. How do students' attitudes towards online music education affect their academic performance in selected private secondary schools in Nairobi County, Kenya?
iv. How do teachers' capabilities in online music education and instruction affect students' academic performance in music education in selected private secondary schools in Nairobi County, Kenya?

(In order to answer these research questions, you are requested to answer question(s) voluntarily)

Who can Take Part in the Study?

The study will involve music teachers and students who have engaged considerably in online music education or learning. The study will focus on music teachers and students in Form 1 through 4.

The researcher will interview 20 teachers and 50 students.

In Case You Agree to Participate in the Study, What Will Happen?

This is what is going to happen once you have agreed to participate in the study:

- *First, the interview will take no longer than 40 to 60 minutes.*
- *Second, a qualified and well-trained interviewer will ask you questions in a private place where you will feel comfortable. In case there is any question you feel uncomfortable responding to, you will not be coerced into responding. The questions will be on the following areas:*
  - *i. Student Engagement*
  - *ii. Skill Development*
  - *iii. Students' Attitude*
  - *iv. Teachers' Capabilities*
  - *v. Music Students' Academic Performance*
- *Third, after the interview, the researcher will confirm that you have been comfortable*

with the interview process and that you would still like your responses to be used in the research study.

- *Last, you are requested to provide your contact details (phone number or any other reliable form of contact). This will help reach you in case new information regarding the study emerges. Other reason(s) for requesting your contact details is (are) to get back to you in case we might need some further clarification from you.*
- *The contact details you will provide shall remain confidential to the lead researcher (PI).*

What Potential Risks are Associated with Participation in this Study?

Any research involving human subjects has the potential of imposing a number of risks/harms or discomfort, including psychological, physical, emotional, environmental, cultural, etc.

There are no significant risks to participating in the study. In case of psychological or

emotional distress, the participant is always free to opt out of the study.

Privacy & Confidentiality

Privacy is the right of an individual to have some control over how his or her personal information/data is collected, used, and/or disclosed. Confidentiality is the duty to ensure information (data) is kept secret only to the extent possible/reasonable.

All private information, such as names, ages, and contact details, will be kept confidential and not shared with others. Private or sensitive information will also be stored securely in a locked cabinet, and electronic information or documents will be stored in password-protected files/folders.

Personal data will only be handled by the researcher.

(PI) and all private/personal information will be deleted or shredded and destroyed (for paper documents) after a period of 3 years.

In case you aren't comfortable answering any of the questions during the interview because of feeling embarrassed or uncomfortable, it will be within your rights to decline. Otherwise, every measure has been taken to ensure that the interview is conducted in a private area with minimal to no interference so that you feel comfortable

What Benefits are you going to accrue by participating in the study

There are no monetary benefits gained from participating in the study. However, you may gain better insights into online music education by reflecting on and engaging in the research process. This study will provide insight for music educators, music students, and other relevant stakeholders on what has worked well in online music education and the gaps that still need to be addressed. Student teachers training to be music educators will gain useful information about the skills and competencies they need to thrive in an increasingly online learning environment. Teaching and training curricula can be designed to address the gaps identified by this study.

What will it Cost you to participate in the Study?

The cost to the participant will be the time taken to be interviewed for the study. Aside from this, there are no other major costs to you.

Will Any Expenditure that You Incur by Participating in the Study be Refunded? Or will you be paid for participating in the Study?

There are no monetary benefits gained from participating in the study. There are also no reimbursements for any expenditure that you may incur by participating in the study.

In Case I have any Further Questions/Concerns in the Future, Whom Should I contact?

In the event that you need further clarification or have questions regarding your continued participation in the study, feel free to contact the PI at {*phone number: +254 764 424 543*}. In case of concerns regarding your rights and/or obligations as a research

participant, do not hesitate to contact the secretary, KUREC on { kurec@kabarak.ac.ke 0722 587768/ 0723707484}

What Alternative Options are Available to Me?

The decision on whether to participate or not is absolutely voluntary. You will be free to withdraw from the study at any point during the study without providing any explanation.

How Will the Findings of this Study be Communicated or Shared?

Upon successful completion of the study, the findings will be published and made available in the Kabarak University repository, which is online.

Statement of Consent

I have comprehensively read the consent form, or/the information has been comprehensively read to me by the researcher. I have understood what the study is about, and all the questions and concerns I had have been addressed clearly and concisely. The study benefits and foreseeable risks have been explained to me. I totally understand that my decision to participate in this study is voluntary, and I have the right to withdraw at any point during the study.

I freely consent to participate in this study.

Signing this form does not in any way imply that I have given up the rights I am entitled to as a participant

I agree to participate in this research YES_____NO_____

I agree to provide my contact details for follow-up YES_____NO_____

Participant's Name _____

Participant's Signature/Thumbprint_____Date _____

Appendix III: Informed Consent Form – For Minors

KABARAK UNIVERSITY RESEARCH ETHICS COMMITTEE

INFORMED CONSENT FORM FOR MINORS

STUDY TITLE: Influence of Online Music Education on Academic Performance of Music Students in Selected Private Secondary Schools in Kenya

PI: Kevin Kianda Mwita_Affiliated Institution: Kabarak University_____

Co-investigator(s): N/A_____Affiliated Institution(s): N/A

Introduction

Your child is invited to participate in this research study being undertaken by the above-listed investigators. This form will help you gather information about the study so you can decide voluntarily whether to participate. You are encouraged to ask any questions regarding the research process, as well as any benefits or risks that may accrue to you by participating. After you have been adequately informed about the study, you will be requested to either agree or decline to participate. Upon agreeing for them to participate in the study, you will be further requested to affirm that by appending your signature/thumbprint on this form. Accepting or declining them to participate in this study does not in any way waive the following rights, which they are entitled to:

a. Voluntary participation in the study;
b. Withdrawing from the study at any time without the obligation of having to give an explanation and;
c. Access to services that you're entitled to

A copy of this form will be provided to you for your own records Should I continue? YES/NO _____

This study has been reviewed and approved by Kabarak University Research Ethics Committee (KUREC)

What is the Purpose of the Study?

The main reason(s) for conducting this study are to answer the following questions:

1. What is the influence of online music learning on student engagement in selected private secondary schools in Nairobi County, Kenya?
2. How does online music learning affect the practical skills development of private secondary students in Nairobi County, Kenya?
3. How do students' attitudes towards online music education affect their academic performance in selected private secondary schools in Nairobi County, Kenya?
4. How do teachers' capabilities in online music education and instruction affect students' academic performance in music education in selected private secondary schools in Nairobi County, Kenya?

(In order to answer these research questions, they are requested to answer question(s) voluntarily)

Who can Take Part in the Study?

The study will involve music teachers and students who have engaged considerably in online music education or learning. The study will focus on music teachers and students in Form 1 through 4.

The researcher will interview 20 teachers and 50 students.

In Case You Agree for them to participate in the Study, What Will Happen?

This is what is going to happen once you have agreed for them to participate in the study:

- *First, the interview will take no longer than 40 to 60 minutes.*
- *Second, a qualified and well-trained interviewer will ask them questions in a private place where they will feel comfortable. For safeguarding purposes, a second adult from the participant's school will witness the interview. If there is any question they feel uncomfortable answering, they will not be coerced into responding. The questions will be on the following areas:*

i. Student Engagement

---

ii. Skill development

---

iii. Students' Attitude

---

iv. Teachers' Capabilities

---

v. Music Students' Academic Performance

- *Third, after the interview, the researcher will confirm that they were comfortable with the interview process and that they would still like their responses used in the research study.*
- *Last, the researcher may contact the student again through their school and teachers if they need further clarification on their responses.*
- *The personal information they provide shall remain confidential to the lead researcher (PI).*

What Potential Risks are Associated with Participation in this Study?

Any research involving human subjects has the potential to impose a number of risks/harms or discomforts, including psychological, physical, emotional, environmental, and cultural risks.

There are no significant risks to participating in the study. In case of psychological or emotional _distress, the participant is always free to opt out of the study.

Privacy & Confidentiality

Privacy is the right of an individual to have some control over how his or her personal information/data is collected, used, and/or disclosed. Confidentiality is the duty to ensure information (data) is kept secret only to the extent possible/reasonable.

All private information, such as names, ages, and contact details, will be kept confidential and not shared with others. Private or sensitive information will also be stored securely in a locked cabinet, and electronic information or documents will be stored in password-protected files/folders. Personal data will only be handled by the researcher

(PI) and all private/personal information will be deleted or shredded and destroyed (for paper documents) after a period of 3 years.

If they aren't comfortable answering any of the questions during the interview because they feel embarrassed or uncomfortable, it will be within their rights to decline. Otherwise, every measure has been taken to ensure the interview is conducted in a private area with minimal to no interference, so they feel comfortable. For safeguarding purposes, a second adult from the participant's school will witness the interview.

What Benefits are they going to accrue by participating in the Study?

There are no monetary benefits gained from participating in the study. However, they may gain better insights into online music education through reflection and engagement in the research process. This study will provide insight for music educators, music students, and other relevant stakeholders on what has worked well in online music education and the gaps that still need to be addressed. Student teachers training to be music educators will gain useful information on the kinds of skills and competencies they need to be able to thrive in an increasingly online learning

environment. Teaching and training curricula can be designed to address the gaps that this study will identify.

What Will it Cost Them to Participate in the Study?

The cost to the participant will be the time taken to be interviewed for the study. Aside from this, there are no other major costs to them.

Will Any Expenditure that They Incur by Participating in the Study be Refunded? Or will they be paid for participating in the Study?

There are no monetary benefits gained from participating in the study. There are also no reimbursements for any expenditure that they may incur by participating in the study.

In Case I have any Further Questions/Concerns in the Future, Whom Should I contact?

In the event that you need further clarification or have questions regarding their continued participation in the study, feel free to contact the PI at {*phone number: +254 764 424 543*}. In case of concerns regarding their rights and/or obligations as a research participant, do not hesitate to contact the secretary, KUREC on { kurec@kabarak.ac.ke 0722 587768/ 0723707484}

What Alternative Options are Available to Them?

The decision to participate is entirely voluntary. They will be free to withdraw from the study at any time without providing an explanation.

How Will the Findings of this Study be Communicated or Shared?

Upon the successful completion of the study, the findings of this research will be published and made available at the Kabarak University repository, which is online.

Statement of Consent

I have comprehensively read the consent form, or/the information has been comprehensively read to me by the researcher. I have understood what the study is about, and all the questions and concerns I had have been addressed clearly and concisely. The study benefits and foreseeable risks have been explained to me. I totally understand that my decision for my child to participate in this study is voluntary, and they have the right to withdraw at any point during the study.

I freely consent to them participating in this study.

Signing this form does not in any way imply that my child has given up the rights they are entitled to as a participant.

I agree for my child to participate in this research YES_____ NO_____

I agree to provide my contact details for follow-up YES_____ NO_____

Parent/Guardian's Name _____

Parent/Guardian's Signature/Thumbprint_____Date _____

For safeguarding reasons, a second adult from your child's school will be present to witness the interview.

[For the adult Witness Only – Please sign below]

Name of Witness:----------

Witness's Signature:---------- Date:----------

Appendix IV: KUREC Clearance Letter

KABARAK UNIVERSITY RESEARCH ETHICS COMMITTEE

Private Bag - 20157
KABARAK, KENYA
Email: kurec@kabarak.ac.ke

Tel: 254-51-343234/5
Fax: 254-051-343529
www.kabarak.ac.ke

OUR REF: KABU01/KUREC/001/04/06/24

Date: 10th June, 2024

(PI) Kevin Kianda Mwita
Reg: GME/M/2766/09/18
Kabarak University,

Dear Kevin,

RE: INFLUENCE OF ONLINE MUSIC EDUCATION ON ACADEMIC PERFORMANCE OF MUSIC STUDENTS IN SELECTED PRIVATE SECONDARY SCHOOLS IN KENYA

This is to inform you that ***KUREC*** has reviewed and approved your above research proposal. Your application approval number is ***KUREC-040624.*** The approval period is ***10/06/2024 – 10/06/ 2025.***

This approval is subject to compliance with the following requirements:

i. All researchers shall obtain an introduction letter to NACOSTI from the relevant head of institutions (Institute of postgraduate, School dean or Directorate of research)
ii. The researcher shall further obtain a RESEARCH PERMIT from NACOSTI before commencement of data collection & submit a copy of the permit to **KUREC.**
iii. Only approved documents including (informed consents, study instruments, MTA Material Transfer Agreement) will be used
iv. All changes including (amendments, deviations, and violations) are submitted for review and approval by ***KUREC***:
v. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to ***KUREC*** within 72 hours of notification;
vi. Any changes, anticipated or otherwise that may increase the risk(s) or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to ***KUREC*** within 72 hours;
vii. Clearance for export of biological specimens must be obtained from relevant institutions and submit a copy of the permit to KUREC;
viii. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal and;
ix. Submission of an executive summary report within 90 days upon completion of the study to ***KUREC***

Sincerely,

KABARAK UNIVERSITY INSTITUTIONAL RESEARCH ETHICS COMMITTEE 1 APPROVED

Prof. Jackson Kitetu PhD.
KUREC-Chairman
Cc Vice Chancellor
DVC-Academic & Research
Registrar-Academic & Research
Director-Research Innovation & Outreach
Institute of Post Graduate Studies

Appendix V: NACOSTI Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **212788**

Date of Issue: **04/July/2024**

RESEARCH LICENSE

This is to Certify that Mr.. Kevin Kianda Mwita of Kabarak University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: INFLUENCE OF ONLINE MUSIC EDUCATION ON ACADEMIC PERFORMANCE OF MUSIC STUDENTS IN SELECTED PRIVATE SECONDARY SCHOOLS IN KENYA for the period ending : 04/July/2025.

License No: **NACOSTI/P/24/37189**

212788

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix VI: Evidence of Conference Participation

KABARAK UNIVERSITY

Certificate of Participation

Awarded to

KEVIN KIANDA MWITA

For successfully participating in the 14th Annual Kabarak University International Research Conference held from 7th-8th October 2024 and presented a paper entitled ***"Influence of Online Music Education on Academic Performance of Music Students in Selected Private Secondary Schools in Kenya."***

Conference Theme

Exploring The Intersect Of Creative Arts Education And Practice With The 21st Century Digital Revolution

Prof. Mellitus Wanyama
Dean, School of Music & Media

Dr. Phillip Nyawere
Ag.Director - Research, Innovation and Outreach

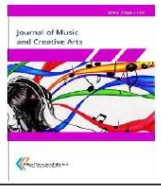
Kabarak University Moral Code

As members of Kabarak University family, we purpose at all times and in all places, to set apart in one's heart, Jesus as Lord.

(1 Peter 3:15)

Kabarak University is ISO 9001:2015 Certified

Appendix VII: List of Publication



Journal of Music and Creative Arts

[ISSN 2958-1184]
Volume: 04 Issue: 01 | July-2025

JMCA

TRANSFORMATION OF MUSIC EDUCATION IN SUB-SAHARAN AFRICA: AN ASSESSMENT OF ARTIFICIAL INTELLIGENCE APPLICATIONS

Authors

Kevin Mwita [(1)]; Ruth Owino [(2)]

Main author's email: kevohnd@gmail.com

(1) Kabarak University, Kenya; (2) USIU Africa, Kenya

Cite this article in APA

Mwita, K. & Owino, R. (2025). Transformation of music education in sub-Saharan Africa: An assessment of artificial intelligence applications. *Journal of music and creative arts, 4*(1), 53-65. https://doi.org/10.51317/jmca.v4i1.727

OPEN ACCESS
A publication of Editon Consortium Publishing (online)

Article history
Received: 15.05.2025
Accepted: 14.06.2025
Published: 15.07.2025

Scan this QR to read the paper online

Abstract

This study reviews the use of AI in music education in sub-Saharan Africa. The study applies the systematic literature review method and specifically employs the PRISMA approach to review and report on the use of AI in music education in sub-Saharan Africa. The results gathered from this review study's investigation show that AI positively influences music education in several ways, including personalised learning, assisted music composition, intelligent tutoring, automated assessments and skill development. The research found that artificial intelligence helps learners to have immersive learning experiences with their teachers, become better music creators and gain crucial skills in music composition and production. Using selective literature review and content analysis, the research shows that the region has significant potential in aligning education policies with artificial intelligence applications for better music learning outcomes. Despite AI's transformative potential in music education, challenges surrounding technology adoption, internet penetration and teacher training in sub-Saharan Africa impede its full utilisation. The use of the flipped classroom model, however, can help sub-Saharan Africa reap the benefits of AI in music education in the meantime. Government and non-governmental organisations should invest more in digital education infrastructure and technological resources to unlock the full potential of AI in music education and education in general. Future research should also look into such investment in the sector, to identify gaps, opportunities and inform policy frameworks to accelerate infrastructure development, and ultimately, accelerate AI adoption and application in music education.

Key words: Artificial intelligence, machine learning, music education, music industry, sub-Saharan Africa.