`

INTEGRATING INFORMATION AND COMMUNICATION TECHNOLOGY IN MUSIC COMPOSITION AND PRODUCTION TRAINING: A CASE OF PERFORMING ARTS DEPARTMENT AT KYAMBOGO UNIVERSITY

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DECLARATION

I, Kyosaba Beatrice, declare that this research is my original work which has never been submitted before to any institution of higher learning for any academic award. I also acknowledge the authors whose works I have utilized.

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Signature………………………………..

Date…………………………….........

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APPROVAL

This is to certify that this dissertation has been written under our supervision and it is now ready for submission.

Signature... Date ..../.........../..........

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Second Supervisor

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DEDICATION

I dedicate this work to my sponsors to the master's degree program of vocational

pedagogy, Mr. Kabaseke Stephen Muwonge my husband and our children.

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First and foremost, I would like to thank the Almighty God for the blessings of life, provision, protection and inspiration that have enabled me to be alive as well as to be able to study this course.

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TABLE OF CONTENTS

viii

ix

`

`

LIST OF TABLES

`

LIST OF FIGURES

xii

`

`

LIST OF ACRONYMS/ABBREVIATION

AUP - Acceptable-Use Policy

CAR – Computer Access Ration

DAW- Digital Audio Workstation

DVD Digital Video Discs (DVD)

DVR Digital Video Recorders (DVR)

FL-Fruity Loop

GUI Graphical User Interface

MET- Music Education and Training

MIDI- Musical Instrument Digital Interface

MMCP Manhattan Ville Music Project

MVP-Masters in Vocational Pedagogy

NCTE – National Council of Teacher Education

RAM-Random Access Memory

UVQF: Uganda Vocational Qualifications Framework.

VET- Vocational Education and Training

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ABSTRACT

The purpose of the study was to integrate ICT in the teaching and learning of music to enhance competence in music composition and production at the department of Performing Arts in Kyambogo University. The objectives of the study were to: i) create availability of adequate ICT equipment in the music department; ii) demonstrate to students the use of ICT in Music composition and production; and iii) evaluate the implemented use of ICT in the teaching and learning of music composition and production. In this research a methodology involving a qualitative approach was employed. Under this approach the following methods, namely: work process analysis, future workshop, interview and observation were utilized to collect data by way of analyzing the situation at the department. This analysis, revealed that there was inadequate utilization of ICT in the music education at the department due to inadequate funds for ICT infrastructural development. This, the stakeholders noted, would negatively affect the competencies and competitiveness of the graduates in the labour market. During Future Workshop sessions the stakeholders agreed upon a work plan of interventions that would address this problem. The plan involved: securing a room for the music studio, installing ICT Music software on both the departmental and students private gadgets, getting access to other university computer laboratories, consulting reference music books from the main University library, producing handouts, getting more computers, installing internet, and finally, revising departmental time table to include music composition and production course for undergraduate programs. This plan was wholly implemented. It enlisted very encouraging positive results; though with some shortcomings. The evaluation of the implemented plan revealed the following. The students mostly learned Finale note pad and Fruity loops Studio software(60%). The course was highly relevant to students. The biggest percentage (60%) of the students overwhelmingly appreciated the course. Thirty percent (30%) of the students were fully confident of the acquired the knowledge and skill from the course. Conclusion: There should be ideal digitalized music composition and production equipment. Recommendations: The number of computers should be increased to achieve a student computer ratio (SCR) of 5:1. Secondly, is a need to establish a music studio, thirdly, is a need to increase the number of music instructors. Finally, there is a need to review the syllabi to include ICT in Music education in all programs in the department.

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CHAPTER ONE: INTRODUCTION

1.0   Introduction

Strengthening of vocational education and vocational teacher training is on the international agenda. For example, in 2012, the European Commission published the commission staff working document which highlighted the importance of Technical Vocational Education Training (TVET) as an engine of innovation and growth. Many countries have picked up TVET approach. Australia emphasizes the role of VET in driving economic growth and inclusion. In China, her talent development plan of 2020 sets out an ambitious program for TVET seen as a major channel to boost economic growth. Uganda put in place a strategic Plan entitled: Skilling Uganda, 2012, that emphasized a paradigm shift (from theoretical knowledge) to skills development. The main purpose is to create employable skills and competencies relevant in the labor market instead of educational certificates.

1.2   Background to the study

A number of foresighted nations in the world have greatly progressed on the journey of modernization of the Vocation Technology Education and Training. The fast growing digital revolution has a lot of implications across all vocations. In the music vocation, the revolution throws the traditional vocational pedagogy and the current hegemonic notions of teacher-learner into question (Bakan and Gouzoauasis, 2011).

Most teachers of music in developing countries are still following the traditional vocational pedagogy but the students they teach, are digital natives (having grown up in an environment 'speaking' the digital technology language). Considering the fluency that most children and

adolescents possess with digital media, and the lack of fluency the majority of teachers possesses, those roles are frequently reversed and teachers no longer hold the role of knowledge provider and master leader. The ongoing endemic apotheosis of Western classical music and traditional school music must cease immediately if music educators are to remain relevant (Bakan and Gouzoauasis, 2011).

The situation Bakan and Gouzoauasis are talking about in the above quotation is the same as the situation at Kyambogo University where by majority of instructors lack fluency of digital media but some of the students they teach are digital natives. Therefore, instructors of music at Kyambogo University have to acquire ICT skills and competencies necessary for contemporary relevant music education.

At a time when demand for new skills is growing as never before, Music Education and Training (MET) ought to encourage innovation, competitiveness, new partnerships, and prepare citizens for employment in the domestic and global labor markets. There ought to be a paradigm shift in the digital music pedagogy, if we are to adequately respond to the Technical Education and Vocation Training needs of the 21st Century (Bakan and Gouzoauasis, 2011). The researcher concurs with Peter and Danny as the situation at Kyambogo University is long overdue, for a paradigm shift in the digital music pedagogy, especially in music composition and production.

In the western world, modern technology is increasingly used in modern music education from the elementary school to the university level, where electronic instruments are present in most well equipped music classrooms. Computers and the use of the Internet broaden the field of music education even further, (Bakan and Gouzoauasis, 2011). Many different computer programs and software developed lately make music making, composition, and

accompaniment, practice and improvisation easier and more meaningful. Music and music making is becoming more independent learning.

Looking at what is taking place on ground in Uganda education program, the contemporary musicians in the market place tend to be more competent in the use of ICT than the aspiring music professionals who are being trained at the university. The contemporary musicians get on job training through apprenticeship. This has resulted into a paradox of contradictory scenario where the music armatures, who have access to the digital technology, lead the Uganda music industry to the bewilderment of the music professionals!

Kyambogo University as a case in Uganda ought to take advantage of rapid global changes as a result of communication revolution to develop music composition and production techniques to meet the contemporary music market demands.

1.3   Statement of Motivation

The researcher as a practicing instructor in music and an apprentice in the Masters of Vocational Pedagogy (MVP) program was prompted to carry out this research with the aim of helping students in the department of Performing Arts in Kyambogo University, embrace ICT in the teaching and learning of music education.

1.4   Situation analysis

This study hinges on a research and development paradigm which calls for participation of both the researcher and stake holders. Activities inform of a work process analysis and future workshop were employed to generate a set of problems; possible solutions and a way forward were discussed and agreed upon by stakeholders as a means to the realistic problem to be solved. The research employed both qualitative and quantitative methods.

Data was collected using situation analysis, future workshop, interview, and observation.

1.4.1 Work process analysis

Using the analysis tools designed, a work process analysis was conducted at Kyambogo University, department of Performing Arts to examine the integration of ICT in the teaching and learning of music education. A work process analysis is a process of identifying the state of internal and external factors within an organisation or institution. During the time of work process analysis, it was found out that only two computers were available in the department and were being used specifically for research purposes. The undergraduate students had not yet been exposed to the digital technology in the composition and production of music. Some of the respondents the researcher interacted with for data collection are shown in figure 1 below;

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Figure 1: Work process analysis (2nd 11.2017)

1.4.2Future workshop

The future workshop was held on 24th January; 2018. It was attended by 41 participants who came from MVP and Performing Arts Department (Both staff members and students). Participants introduced themselves; records were taken by Lameck Lwakasana and Anywar David, both students of the Performing Arts department. Below is the photo of some of the participants who attended the future workshop.

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Figure 2: participants in the future work shop, (24th Jan.2018)

1.4.2.1Preparation phase

The concept of future workshop was explained to that is; a future workshop is a research tool/method of vocational action research. It is a method that enables a group of people to develop new ideas or solutions when working.

The concept for action research was also explained as either research initiated to solve an immediate problem or a reflective process of progressive problem solving led by individuals working with others in teams or as part of a "community of practice" to improve the way they address issues and solve problems.

Action Research is a method of systematic enquiry that teachers undertake as researchers of their own practice. The enquiry involved in Action Research is often visualized as a cyclical process (James, n.d) other words, one of the main characteristic traits of action research relates to collaboration between researcher and member of organization in order to solve organizational problems. Action research is a methodology with dual aims of action and

research.   These actions do bring a change in the community, organization or program and the research to increase understanding on the side of the researcher, the client or both.

1.4.2.2 Critical Phase

The researcher explained the area of concern which was identified during work process analysis and the concern was inadequate utilization of ICT. The researcher explained in details that despite the existing technology in the music department i.e. dummies, charts, models and real music instruments; Information, Computer Technology (ICT) is still underutilised. That the ability to create: compose, and harmonize music using digital tools was not well developed, and yet music education program for undergraduate students is not able to produce individuals who can function productively in a highly competitive market economy. A critical question was posed to participants, 'What do you believe to be the causes of this underutilization of ICT in music composition and production?' Through the process of brainstorming, participants gave their responses, the details of which can be found in **Appendix D.**

Another critical question was posed to participants, what do you believe to be the effects of underutilization of ICT in music composition and production? Through the same process of brainstorming, participants gave their responses, the details of which are in **Appendix E.**

The responses were summarized and synthesized into the following main points of critique. Inadequate capital for infrastructural development, inadequate resource books for reference, lack of permanent professional ICT staff, inadequate institutional support towards the use of ICT in the teaching/learning of music, lack of enough computers in the department , lack of internet connection to the music department, inadequate teaching/learning resources**:** that is composition and production software programs, delay of payment of ICT instructors, ICT is

not allocated time on the timetable, negative attitude of both staff and students towards the use of ICT in teaching/learning of music, inability of instructors to integrate new ways of ICT in the teaching/learning of music, lack of students' exposure to the use of ICT in music at lower levels, instructors do put more emphasis on theory than on practical and improper government policy on the use of ICT in the teaching/learning of music.

1.4.2.3 Utopian phase

The stakeholders turned the "critique points" into their opposites. These were categorized as administrational, departmental, attitudinal, curriculum and government goals; some of which were short and long term goals to be achieved as indicated below.

There should be adequate capital for infrastructural development, adequate resource books for reference, permanent professional ICT staff, and adequate institutional support towards the use of ICT in the teaching/learning of music. More computers should be added in the department and internet to be connected to the music department, there should be adequate teaching and learning resources that are composition and production software programs and timely payment of ICT instructors. ICT should be allocated more time on the timetable. Both staff and students should have a positive attitude towards the use of ICT in teaching and learning of music. Instructors should have an ability to integrate new ways of ICT in the teaching and learning of music. Learners should be exposed to the use of ICT in music at lower levels. Instructors should put more emphasis on practical than on theory in the contemporary digital music composition and production lessons, and finally, there should be proper government policy on the use of ICT in the teaching and learning of music.

Stake holders carried out a common analysis of the ideas or solutions and these solutions were put in their categories to help participants identify who is responsible for what. The

stakeholders also identified possible effects of underutilization of ICT in the teaching and learning of music composition and production if not addressed. They could result into: graduates without relevant competence, unemployment, reduced enrolment in the department of Performing Arts, monopolization of composition and production of music in the department.

At this stage, stake holders decided to leave the effects in the critical phase hopping that once we get objectives from the causes, and get solutions to the causes, we will have addressed these effects.

1.5 Statement of the problem

Information Communication Technology (ICT) is now an important appliance in all areas of life including education. Many different computer programs and software developed lately make music making, composition, accompaniment, practice and improvisation more efficient. In this way it is very important to integrate ICT in the teaching and learning of music composition and production in order to produce competent graduates.

The use of ICT in the teaching and learning process of music composition and production in the Department of Performing Arts of Kyambogo University is underutilized. This is largely due to inadequate funding for ICT infrastructural development which includes computer laboratories, internet connection and music studios. If this is not addressed, the department is likely not to be in position to produce graduates with the required competencies in music composition and production. This would negatively affect the competitiveness of the graduates in the labour market.

This action research aims at addressing this gap through an intervention aimed at enhancing the integration of ICT in the teaching and learning of music composition and production in the department.

1.6   Purpose of the study

The purpose of the study was to integrate ICT in the teaching/learning of music to enhance competence in music composition and production at the department of Performing Arts in Kyambogo University.

1.7   The objectives of the study

The objectives of the study were to:

i.   Create availability of adequate ICT equipment in the Department of Performing Arts at Kyambogo University.

ii.   Guide students in the department on the use of ICT in Music composition and production.

iii.   Evaluate the use of ICT in the teaching and learning of music composition, and production in the Department at Kyambogo University.

1.8 Justification of the Study

It was identified in the situation analysis that ICT was underutilised in the teaching of music composition and production at Kyambogo University, department of Performing Arts. This study focused on the use of ICT in the teaching/learning process of music to enhance competence in music composition and production.   It aimed at producing skilled and competent musicians for the competitive labour market. There are some scholars like Gouzouasis and Danny 2011;Burton, 1990; Thomas, 1970, who have done similar studies in

the western world. But, this is the researcher's original research which was done for the first time here in Kyambogo University, department of Performing Arts.

1.9 Significance of the Study

The study will go a long way in helping teachers and all stakeholders to:

- Evaluation of the use of ICT in the teaching/learning of music composition and production.

- Encourage the use of ICT in the teaching and learning of music to enhance competence in composition and production.

- Act as a reference point for future scholars and researchers in the university and other vocational training institutions.

- Enhance the installation of a studio which will aid the teaching/learning of music composition and production

- Assist in the evaluation of the use of ICT in the teaching/learning of music composition and production.

1.10 Scope of the study

1.10.1 Geographical scope

The study was conducted in the department of Performing Arts, faculty of Arts and social sciences in Kyambogo University.

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1.10.2 Context scope

The study encouraged availability of adequate ICT equipment in the department, and enabled instructors to guide students on the use of ICT in music composition and production. Finally, it helped on the evaluation of the use of ICT in the music composition and production.

1.10.3 Time scope

The study focused on 2nd semester (Jan-June) 2018

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CHAPTER TWO

LITERATURE REVIEW/CONCEPTUAL FRAMEWORK

2.1   Introduction

This chapter presents the conceptual framework of integration of ICT in the teaching/learning of music composition and production. It highlights authors who have done similar studies and different nations which have benefited in the integration of ICT in music composition and production.

2.2   Conceptual framework

This conceptual framework helps to describe the context in which the integration of ICT in the teaching and learning process of music can enhance competence in music composition and production.
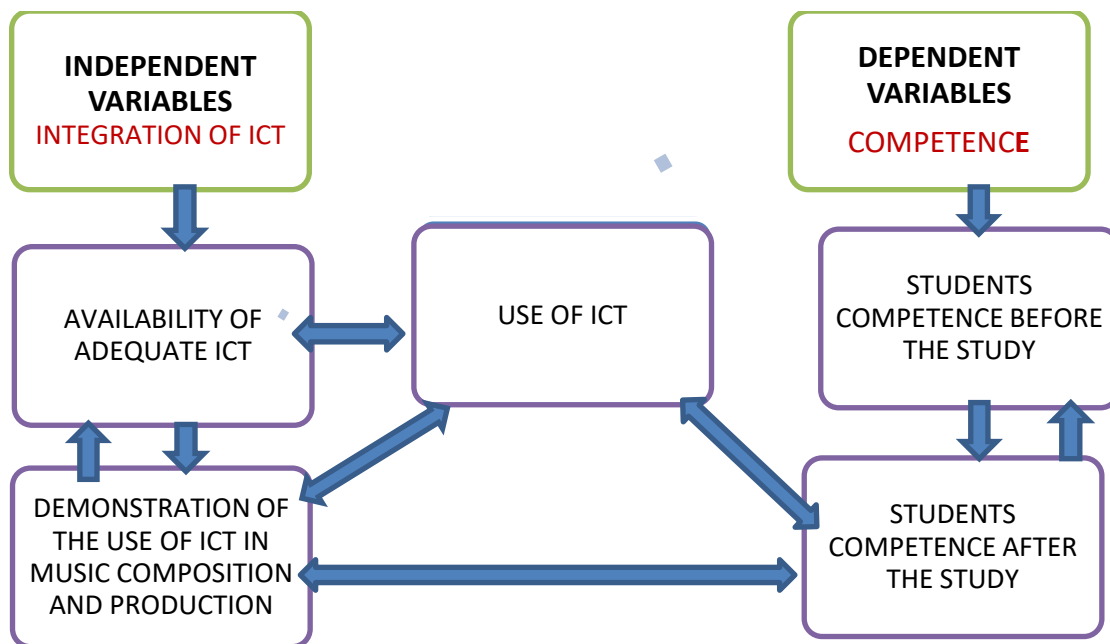
Figure 2: Conceptual framework adopted from Bilboa (2003) Beatrice J.Bett et al (n.d)

According to this study, there are independent and dependent variables which interact to determine the enhancement of competence in music composition and production. These are availability of adequate ICT music equipment, and when students are guided on the use of ICT in music composition and production. If Kyambogo University, Performing Arts department could be well furnished with adequate ICT music equipment, and students are well guided on the use of ITC, this department could produce graduates who can compete in this competitive world of music.

2.3 The need to create availability of adequate ICT equipment in the Department of Performing Arts

Most musicians, who are excelling in the Uganda music industry, have trained through apprenticeship on job training. Potentially, such contemporary musicians in the market place tend to be more competent than the aspiring music professionals who are being trained at

university. This has resulted into a contradictory scenario where the music armatures, who have access to the digital technology, lead the Uganda music industry to the bewilderment of the music professionals! Where are the music professionals? What's wrong with our curriculum? Who is answerable for the gap in the music training institutions? What can we do as music professionals to revive the music education of our beloved country Uganda! Have we ever looked closely at our curriculum to see what could be missing? This research reveals that by the time this study was conducted, there was underutilization of ICT in the teaching and learning of music composition and production at Kyambogo University, Performing Arts department. A number of foresighted nations in the world are quite a head in the journey of modernization of the Vocation Technology Education and Training of musicians.

> Many governments, including those of Singapore and Hong Kong, promote ICT as the necessary and inevitable route towards better education, as is made explicit by the title, 'Hong Kong's five-year strategy plan, Information Technology for Quality Education'. The Hong Kong Special Administrative Region (HKSAR) has made a huge investment in the development of ICT in the education sector. A major mission of Hong Kong education is to initiate a paradigm shift teaching methodology from a largely textbook-based, teacher-centered approach to a more interactive and learner-centered one (Ho., 2007)

 Kyambogo University, department of Performing Arts also needs to initiate such a paradigm shift teaching methodology if the department is to be proud of its products. In the light of the rapid global changes, as a result of the communication revolution, there are a number of globalization benefits that Uganda ought to take advantage of and develop music

composition and production techniques so as to meet the contemporary music market demands.

2.3.1 ICT and contemporary music apprenticeship

There is a need to look at the gap between the 'real world' and what should be taught, versus our education program and 'what is taught' today. The real world needs contemporary music which is digitally infused The current music education program at Kyambogo University, by the time the study was conducted; was still classical and analogue, and it needed adequate utilization of ICT. At a time when demand for new skills is growing as never before, VET ought to encourage innovation, competitiveness, new partnerships, and prepare citizens for employment in the domestic and global labor markets.

There ought to be a paradigm shift to the digital music pedagogy, if we are to adequately respond to the Technical Education and Vocation Training needs of the 21st Century. Our curriculum must be restructured to include the use of ICT in the teaching and learning of music composition and production. For the teacher directed school music education is no longer a viable pedagogical force. Besides, failure to recognize the broad impact of digital media will make much current practice in schools, private music studios, and traditional music making environments obsolete e.g., community bands and choirs (Bakan and Gouzoauasis, 2011). The same thing can happen to Performing Arts department of Kyambogo University if it fails to realize the importance of digital media. The Music curriculum in the department of Performing Arts at Kyambogo University must be revised to incorporate digital media.

2.3.2 Use of Digital Music Revolution for the Music Pedagogy

Global communication revolution, information revolution as exemplified in the technological changes and now the digital revolution are here to stay. Such mega changes that are moving at a terrific speed, like tornadoes, are coming along with major implications wherever they are and their influences are sweeping over on the globe. Hence, there is urgency for Kyambogo University, department of Performing Arts to embrace the digital revolution, and renovate the music technology with modern ICT equipment. It is in so doing that the university can produce competent students in the music industry.

The new digital technologies provide tools, networks, and creative ways of producing and recording sound that are already in use, that could, and we argue should, be integrated fully into emerging music educational practice, (Bakan and Gouzoauasis, 2011).

Gouzouasis and Bakan (2011) raised these areas of concern in the western world in as far the challenges of digital Information Communication Technology (ICT) revolution is causing on the music vocation training pedagogy. If the music schools in the Western countries like America and Europe are already struggling and looking for solutions to overcome the digital challenges, to what extent should the music schools in the developing countries like Uganda, and higher institutions of learning like Kyambogo University in particular wake up from sleep and follow the suite?

 "Music may be becoming less of a "profession" and more of an income generating activity!" (Bakan and Gouzoauasis, 2011). That is, other than the art and skills of music being an endowment of only a few talented people in society, the contemporary ICT revolution has made it easy for the less talented people to learn and 'poses' such music art and skills in a very big cross section of the population in society. Our profession requires a melodramatic

shift from dictating curricula and curriculum content from the 1950s— meaningless to the majority of youth for at least the past 40 years. The biggest problem that the profession needs to overcome is the serious diet of classical music and classical music study at all levels of music education. By severely limiting what constitutes "good music" and permitting only limited forms of music making for future music educators, our teaching institutions isolate themselves from the realities of 21st century music that are founded upon numerous forms of popular music that have been the core of youth music making and music listening for at least the past 80 years. The on-going endemic apotheosis of Western classical music and "traditional school music" must cease immediately if music educators are to remain relevant (Bakan and Gouzoauasis, 2011).

It is evident that there is a very big potential for music schools to both learn and harvest from the impact of creative, digital technologies on music pedagogy in the 21st century.

2.3.3 Digital music making as a pedagogical practice

In our journey of the music pedagogy reforms, it might be helpful for us to reflect on the model for understanding music making (Gouzouasis & LaMonde, 2005). The model is founded upon the principles of the four-part tetrad – the individual tetrads are neither exclusive nor definitive, and as such, much more can be added to, and interpreted from, the tetrad.

Tetrads are a simple four-fold structure that are coined and employed in the early 1960's to describe various technologies (McLuhan, 1980 updated in 2018). McLuhan is famously known for eloquently bringing ideas to consciousness, long before technologies became the sophisticated communication tools they have become today and he has always remained a significant and powerful voice among artists. Tetrads, as cognitive models, are used to refine,

focus, or discover entities in cultures and technologies, which are hidden from view in the psyche. Tetrad logic frames human artifacts and the means of doing things, (Gouzouasis & LaMonde, 2005).

A tetrad is named so, because of the four lenses through which one may analyze any medium. McLuhan is famously known for having been the first scholar to describe every medium's capability to carry two meanings of being both a medium and a message. Hence the famous statement attributed to him, "the medium is the message". To this effect, Gouzouasis and LaMonde (2005) too add their voice to the "The medium is the Message", saying that it does not refer solely to any medium as being a vehicle that affects the content of media, but that it also refers to the notion that all new media effectively alter established meanings. Hence, the digital migration in the use of ICT from the past analogue technology in music education is not an exception. The use of ICT in the music industry has already altered supply and demand forces in as far as the local, national and global music market forces are concerned. The music schools have no choice but also to comply with the digital revolution dictates, lest our students mentored in the past and cherished analogue pedagogical classrooms, look out of place!

The tetrad is enacted when four simultaneous questions about media are posed: What does the medium enhance? What does it retrieve from the past? What does it reverse into? What does it make obsolete (i.e., obsolesce). As a natural consequence of asking McLuhan's four questions, one may begin to understand the tetrad as comprising four actions: enhancement, retrieval, reversal into (transformation), and obsolescence. The combined actions describe the functions and subsequent impact of a medium. The tetrad serves to illuminate a different process of change, one that happens simultaneously. For example, the written word enhances thought, it retrieves story, it reverses forgetfulness, and it obsolesces oral traditions. For this

reason, we may want to explore and give a scholarly response on McLuhan's tetrad to determine how that model may be used to translate our experiences of media and its usefulness in the teaching and learning of music composition and production, (Gouzouasis & LaMonde, 2005).

In the case of the use of ICT in Music education, we may want to ask ourselves the following question:

i.   What does the use of ICT in music enhance in the music composition and production in the light of the quality and style of the contemporary songs or related messages? For example, the coming of cinema enhanced the art of photography and sound.

ii.   What does the use of ICT in music retrieve or revive from the past music schools in the teaching of music composition and production skills? For example, cinema retrieved oral storytelling, dance, and song. It gave birth to recording through gesture, movement, posture etc.

iii.   What does the use of ICT in music reverse or transform to in as far as music composition, production, pedagogy (teaching methods) in the light of the changing scenarios and standards concerning stage performance, storage, and sharing, exportation, transformation and business promotion/marketing? For example, transformed abstract narrative into virtual reality – like being there!

iv.   What does the use of ICT in music obsolete/discard by using the digital mode in as far as teaching and learning of music composition and production in the light of the past analogue techniques? For example, cinema pushed aside the reading of novel books. Instead

of taking many weeks to read a novel, you could now spend only one or two hours watching cinema!

The following analysis of digital music making below, illustrates that a digitally infused notion of music education does more than obsolesce traditional approaches and practices. Hence, there should be no room for the negative criticisms of the conservative musicians' resistance to the contemporary demands of music education pedagogy reforms to comply our music schools with the ICT revolution!   That, such digitally infused notion of music education, also provides meaningful music making opportunities for both students and teachers. As media of expression, digital music tools do attempt to push aside all forms of music performed in traditional contexts, as well as eradicate the teaching practices, musicianship, skills, and music that are part of those music forms and traditions. But digital technologies also have the potential to revive, enhance, retrieve and transform musical pedagogy as illustrated in Table 1.

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Table 1: Digital music making as pedagogical practice by (Gouzouasis & LaMonde, 2005)

WHAT DOES IT AMPLIFY OR ENHANCE? ➢ - Enhances accessibility to music, as well as to music making. ➢ - Jamming alone and with friends ➢ - Composing is as easy as pushing a button ➢ - Collective, online song writing ➢ - Playing "by ear" ➢ - New compositional processes		**WHAT DOES IT TURN ON ITS HEAD** - Transforms teacher directed instruction into learner cantered instruction. **-** Garage Band replaces stage band. ➢ - Composing becomes a recording process. ➢ - Teaching music becomes facilitating music making 21st century popular music repertoire.
(ENHANCE)	E | T	**(TRANSFORM)**
(RETREIVE)	R | O	
➢ **W** **WHAT DOES IT RETRIEVE FROM THE PAST,** **(e.g. the retro feature of the medium believed to be obsolete)** - Revived music making in new ways ➢ -… informal musician, file sharing in a global recording studio ➢ -The (re)birth of the age of them ➢ - self-publishing musician and creation of global distribution networks ➢ - Social networking and sharing of music ➢ - Playing music and playing musically		**(OBSOLECSE)** **WHAT DOES IT ERODE, REPLACE OF OBESOLECSE** ➢ - Pushes aside traditional music making practices, traditional repertoire. ➢ Traditional teaching approaches. ➢ - Western music notation becomes more and more unnecessary and goes the way of hieroglyphs "Music teachers".

In the light of the figure above, tetrads labour to convey a need for contemporary music schools to adopt the discovery pedagogy, that was explained in 1979 by Ron Thomas, saying that "discovery is the most important and exciting mea such digitally infused notion of music

education, also provides meaningful music making opportunities for both students and teachers ns for learning (Gouzouasis & LaMonde, 2005).

In the department of Performing Arts of Kyambogo University, we need such digitally infused notion of music education, if we are to provide meaningful music making opportunities for both students and teachers. This research tends to enhance students' accessibility to music, as well as to music making in order to develop their competencies in music composition and production.

2.4 Guiding Students in the use of ICT in Music Composition and Production

Music technology plays a big role in the teaching/learning of music composition and production. The music software designed for composition and production, make it easier for students to learn whether with or without teacher guidance once they have access to digital equipment. The new digital technologies provide tools, networks, and creative ways of producing and recording sound that are already in use, that could, and we argue should, be integrated fully into emerging music educational practice. This is the interest of this study, and such is the direction where we should be moving to in the department of Performing Arts.

2.4.1 The Role of Music Technology in the Composition Learning Context

The question that music scholars might have in their mind could be 'how could music technology, in its complex variety, facilitate new dimensions to the possibilities of music composing and production in learning contexts. While quelling the role of music technology in composition learning contexts, Viig (2015) quotes Ruthmann & Hebert (2012: 569), wondering if music technology in the new millennium could also be a tool for multicultural

teaching and learning, and a form of enabling musical empowerment. He investigated in his study: "The possibility of the teachers' consensus on the statement: Could 'computer technology in music composition in the classroom be what the 'phonograph' was to music appreciation just after the turn of the twentieth century? Hickey (2012: 24); Viig (2015) say that, the term 'music technology' embraces a range of different concepts and understandings, from selections of software to hardware capabilities. In line with the interest of this studyViig (2015), asks the following questions: How does music technology impact composing processes in learning contexts? What is the focus and outcome when using particular technologies to learn composition?

Viig (2015) goes ahead to enumerate what music technology tools are used and how they are used. Below are his findings: To compose using a keyboard and a computer to record their compositions. In situations where musicians don't have keyboards and physical equipment available at the school they can record their ideas and composition in progress with mobile phones. Use of iPads

Looking at the four tools utilization as identified by Chen (2012), music technology can be used as a recording tool, a refining tool, an improvising tool and an experimental tool.

Viig (2015), quotes Hoffman and Carter (2012) who describes two different uses of music technology: as a recording tool (Garage band software) and, through a notation program, a substantiation of aims in the curriculum connected to literacy skills. He says that, these tools were used to create original melodic and rhythmic motifs.

> Different applications and software are described in the articles, from Garage band to common notation software, such as Finale, Sibelius, and Note flight. Using music technology gives the composer, whether pupil or professional, an opportunity to receive instant feedback. Pupils can listen to the piece while still

experimenting with it and the recording can become a source of motivation while simultaneously making the creative process transparent (Viig, 2015).

The examples given above indicate the much more benefits of embracing ICT in music production and composition. The department of the Performing Art at Kyambogo University has already indicated interest and commitment to embark on the digital migration journey, and is progressing in the right direction.

Viig (2015) states that; music technology can also offer new opportunities for composing activities, Wise, Greenwood, and Davis (2011). While talking about the implications of teaching and learning with music technology, Viig (2015) quotes the study of Tobias (2012), saying that music technology becomes a part of a 'hybrid space'. This space, both including the digital and the 'real' world practices, expand the possible roles, tools, techniques and processes the students develop and use in music education. A similar way of defining various aspects of the compositional processes using music technology is presented by Breeze (2011) as a 'multimodal space'; including the interactions with the computer, the classroom environment and the teacher and pupils. And, additionally, Crawford (2013) introduces a concept of a 'multidimensional perspective model' for teaching and learning with music technology.

Furthermore, that applying music technology in music education may have consequences, the types of composing activities the digital tools allow, and the intentions of the learning contexts in which these activities occur. A challenge seems to be how we can actually confirm if and how children learn about composing music through the digital tools. How are

musical composing competences defined in digital learning contexts? This however, is beyond the scope of this study.

2.4.2 Balancing the Roles of Multimedia and Teachers in Music Education

As music schools embark on the digital migration from the past analogue music technology, there is a need to balance between the quality of the teachers in the class with the integration of the contemporary ICT in the music vocation pedagogy.

While talking about the quality of higher music education learning and its relationship with multimedia technology, Ho (2007) says that, some of the students in his study thought that multimedia technology was not the decisive factor in higher music education learning. They pointed out that it is the quality of lecturers which was important while multimedia technology was only a teaching aid.

At the heart of these ideas is a shift away from thinking about higher music education learning as being solely concerned with the employment of multi-media technologies, towards understanding it more as a tool to assist in the all-important partnership between teacher and student. (Ho., 2007)

2.4.3. The use of ICT in the Schools

While evaluating the subject, 'successful use of ICT in schools' under the theme, 'The use of ICT in schools in the digital age: what does the research say?', Meier's, Knight, White, (2009) say that successful learners have the essential skills in literacy and numeracy and are creative and productive users of technology, especially ICT, as a foundation for success in all learning areas.

More substantial gains in pupil attainment are achievable where the use of ICT is planned, structured and integrated effectively. Computers should be used to enhance aspects of teaching through the presentation of information in different ways and in different forms. Effective use of ICT can support the development of understanding across the curriculum. (Meiers, Knight, and White, 2009)

Indeed in this digital era, the use of ICT in the classroom is being accepted globally as an indispensable revolution. ICT is important for giving students opportunities to learn and apply the required 21st century skills. That information and communications technology (ICT) is an important part of most organizations these days. That computers began to be used in schools in the early 1980s, and several scholars suggest that ICT will be an important part of education for the next generation and up-to-date technology offers many methods of enhancing classroom teaching and learning.

In the light of the Uganda experience, the new technologies are increasingly getting accepted to have the potential for the upkeep of education across the curriculum and deliver opportunities for efficient student-teacher communication in ways not possible before, Simins Ghavifker, Thanusha Kunjappan, Logeswary Ramasmsy, Annreetha,(n,d).

The action research conducted in the department of Performing Arts, Kyambogo University has proved that ICT in education has a very big potential to transform teaching - But is yet to be optimally harnessed in a developing country like Uganda.

2.4.4 The Use of digital Multimedia in the Teaching and Learning of Music

On the use of digital Multimedia in the teaching and learning of music, Ho (2007) has some insights for us to learn in Africa and Uganda in particular. In this view, he says that in the

1970s and 1980s, most music teacher education programs ran comprehensive and specialized courses on general music, band, strings and chorus.

The term multimedia describes a number of diverse technologies that allow visual and audio media to be combined. It also describes a number of dedicated media appliances, such as digital video recorders (DVRs), digital video discs (DVDs), interactive television, MP3 players, video images, PowerPoint presentation and other technologies, which can help students in music analysis, and which may be useful for learning practical music skills.

Writing music using software packages has been shown to be an educational aid to student composition. For information communication technology (ICT) helps students to enhance their creativity, encourages them to be exploratory, and enables them to achieve learning objectives. Global communication technology has offered a major contribution to music education by unlocking our musical knowledge, and by encouraging creative thinking in educational arenas other than performance-based ones, (Ho, 2007,).

> In this regard, it is now common knowledge that the internet is used to explore new methods of music making, composition, and performance, along with the analysis and discussion of compositional and cultural matters related to digital music and culture among school students, university students, and musicians. As a result, teachers' professional development must include learning how to integrate technology into their educational practice, (Ho, 2007,).

The scholars' views above are what the department of Performing Arts at Kyambogo University should embrace to enhance the use of ICT in the teaching/learning process of music composition and production – the focus of this study.

Music as a vocational subject, is still wanting in the area of increasing the number of skilled and professionally competent practitioners. More so, in the formal school education at all levels Primary, Secondary schools as well as in the higher institutions of learning. Like other vocational subjects, there has been an increasing awareness of the need to rejuvenate professional music vocational training. There is a great need to help students acquire competences in music compositi11on, and production. There are many implications from the music pedagogical shift.

While talking about the future of music making and music education in a transformative digital world, Gouzouasis and Bakan (2011) have extensively painted a picture that the contemporary music vocation direction it ought to take. This is the core for training students, who will be relevant and competent for the contemporary world. They give an overview of the digital technological developments of the past decade and their impact on music, describe the functions of new digital music applications (i.e., "apps"), determine their possible uses in music learning contexts, and examine possible pedagogical implications with regard to youth music and music making in a digital world.

> They say that the digital music applications, and the technologies that deliver and network them, represent a shift in the way music is made and distributed in a global environment. Hence, this techno cultural change has already made a profound impact in the western world, mostly North America and other parts of our global village. However, they extend a caution to the contemporary educators in the 21st century, which we are obligated to take a forward thinking stance to anticipate and adapt to both new technologies and emerging forms of music that is., music interactions and integrate them into meaningful, contemporary curricula, (Gouzouasis and Bakan, 2011,)

Furthermore, Gouzouasis and Bakan (2011) point out that multiple threads are contributing to a renaissance of music making and the evolution of a social online network of music learning. They say that the participatory internet (Web 2.0), as combined with portable digital devices such as smart phones, tablets, and netbooks to create this fertile pedagogical music environment. For example, YouTube, Facebook, and other participatory websites invite communities of learners and creators to share, play, teach, and learn music.

> Users of all ages are teaching each other songs on digital video, posting music lessons, and learning to play music from "tab" and other invented notations. Similarly, that music learning enabled with Web 2.0 is happening in informal settings, not necessarily associated with school music programs, and is often learner initiated, learner created, learner directed, and learner distributed. Along with these Web 2.0 innovations, and the rise of personal digital devices, networked music "apps" continue to redefine notions of music making, music sharing, and music learning. Finally, that sophisticated software has been combined with a networked accessible cultural landscape to enable the formation of communities of learners, teachers, and music makers both inside and outside the school setting. With the exception of the invention of electricity, nothing has had more of an impact on music in the past two centuries than Web 2.0, (Gouzouasis and Bakan, 2011,)

Below are some insights from the "Musicky" music making that is greatly influencing the contemporary music pedagogy.

Digital technologies have fundamentally changed the ways that music may be taught and learned. The multiple streams of technological advancement that began at the end of the last century have made a permanent mark on global culture. The digital revolution is as event as significant as the introduction of Guttenberg's printing press, if not more so. (Gouzouasis

and Bakan, 2011,) Whether it is on an iPad, iPhone, Google Android device, or some other forms of technology, digital software that makes and allows for easy sharing of music will remain with us for the anticipatable future.

Drum emulators, beat boxes, synthesizers, multi-track recording software, and network distribution tools have facilitated a revolution in music making that is likely to have a great impact on music practice as the invention of the pianoforte, the saxophone, radio broadcast and recording technologies, and music notation itself.

While some music scholars may believe that there is no questioning of our current practices, we posit a need to reconsider and expand our curricula and pedagogies to include digital media.   On the other hand, we may need to reconsider the ways that musicians are prepared and educated in academia as it seems that our own music orientations may be the very thing that is stifling the profession from adapting and adopting popular music and digital media into our own learning and teaching practices.

Once humans developed the tools, music technologies have always changed music practice—this in turn should change music educational practices. Just as inventions such as the piano, harmonica, and synthesizer had a lasting impact on music making, the ability to play "real" music using music apps is changing modern sonic expression.

It can be deduced from the above, that the portability and accessibility of new apps beg questions as to why, when, how and what we create. Gouzouasis and Bakan (2011) Labors to explain saying that the digital revolution is in music pedagogy is placing music academicians in a position of questioning how they influence the ways we conceptualize teaching and learning. However, that one thing that we can be certain of, is that, these digitally infused practices cannot be stopped and that they have moved forward at such a rapid pace that the

profession has been largely unable to harness or apply the new technologies in ways that are meaningful to both the music curriculum and youth culture.

It is from such a perplexing situation to the music schools that we are left with no option other than striving to balance between the youth culture famously being referred to as the 'digital natives' and us of the older generation being referred to as the 'digital migrants'

"Digital natives" is a term used to describe those born after 1980 that are fluent in the use of networked digital tools Palfrey & Gasser, (2010); Prensky (2001). Though somewhat disputed as an all-inclusive generational trend, Bennett, Maton & Kervin, (2008), there is a fluency in the media formed by growing up with it that is not possessed by those who have had to adopt it in later years, (Gouzouasis and Bakan, 2011,).

For this reason, the musicians born during the analogue generation (before 1980's) as is the case of the major decision makers in the department of Performing Arts, we have had no choice but to adapt to the digital technologies as they developed, rather than being born into development phases of tools such as synthesizers, MIDI, laptop computers, and music software. No wonder, the digital immigrants, are said to be speaking digital with a form of accent.

As immigrants for many people in the older generation, the musicians have adjusted to the digital environment having been raised in traditional media. On the other hand, digital natives are fluent in the technology as if it is their mother tongue. Hence, there is a demand to develop the concepts of "legacy content" and "future content" to describe the difference between curriculum before and after digital innovations. Legacy content contains systems and patterns of thought that reflect older ways of processing information, (Gouzouasis and Bakan, 2011,).

In music, legacy systems such as notation, rote learning, music theory, harmony, counterpoint and other Western colonial systems of music thought are giving way to a future (and present) of music toys, graphic interfaces, playful music experiences, and digital video sharing. New content may contain and reflect aspects of old content, yet it extends content development by virtue of the fluidity of digital systems. The digital world also brings with it certain problematic. Certainly we must be aware of issues of corporate control, surveillance, privacy, and security. But as music educators, we need to rethink our approaches to learning and teaching. We must invest ourselves in keeping up with these changes if the profession intends to stay meaningful and current with the ways technologically-advanced cultures are using the new technologies for music making.

We must look closely at our curricula. It may be that organized, teacher directed school music education is no longer a viable pedagogical force and our profession's failure to recognize the broad impact of digital media will make many current practices—in schools, private music studios, and traditional music making environments choirs—obsolete e.g., community bands and, (Gouzouasis and Bakan, 2011,).

2.4.5 Guiding students on the use of ICT

Guiding students on the use of ICT is a very important factor if we are to expect positive response from the students. However there are factors that determine the students' motivation to use the very ICT tools to facilitate learning. Deaney, Ruthven and Hennessy (2003) give three factors that greatly contribute to the pupils' enthusiasm for using ICT at school as follows: i) Wider skills are needed in order to make effective use of the tools available. ii) The power of technology must be strategically focussed if it is to enhance subject teaching and learning; as familiar pattern of classroom interaction are shifted by the

introduction of technology. iii Teachers remain central to the provision of structure and support.

Apart from the master students to whom the ICT music skills have been integrated in their syllabus, the undergraduate students have been missing out on this opportunity of integrating this new technology in their training of the music composition and production. It will require a lot of strategic planning on the side of the department of the performing Arts if the university is to greatly benefit from the ICT music revolution. Even, then, however much the Kyambogo University invests in showering the department of the Performing Arts with all of the required ICT equipment and software, the administration still need to maintain the central role of providing qualified lecturers and instructors in mentoring the student's in the music vocations.   Miracles cannot easily happen short of each section of the stakeholders expectations to fulfil their obligations, ranging from the students level to the instructors as well as the policy makers and policy implementers!

2.4.6 Challenges leading to lack of adequate guidance to students

There are many challenges leading to the lack of adequate guidance to students on the use of the ICT in schools. Below are some of such challenges.

2.4.6.1 Lack of effective training

It would be prudent for the university administration wing to plan a short term in-service training course to equip the music lecturers with ICT skills in the teaching of music composition and production.

Lack of effective training is a global challenge faced by many institution of learning in the world, Simin Ghavifker, Thanusha Kunjappan, Logeswary; Annreetha Anthony (n, d) gives

many examples of studies that have identified limited or lack of effective training being one of the major obstacles of implementing new ICT teaching programs in schools. Those studies include Albirini, (2006); Balanskat et al., (2006); Beggs (2000); Özden, (2007); Schoepp, (2005); Sicilia, (2005). Toprakci, (2006); Ghavifekr & Wan Athirah, (2015) They quote Beggs (2000) who found that one of the top three barriers to teachers' use of ICT in teaching was the lack of training.

> According to Becta (2004), the issue of training is certainly complex because it is important to consider several components to ensure training effectiveness. These were time for training, pedagogical training, skills training, and an ICT use in initial teacher training. Correspondingly, recent research by Gomes (2005) relating to various subjects concluded that lack of training in digital literacy, lack of pedagogic and didactic training in how to use ICT in the classroom and lack of training concerning technology use in specific subject areas were obstacles to using new technologies in classroom practice. Some of the Saudi Arabian studies reported similar reasons for failures in using educational technology: the weakness of teacher training in the use of computers, the use of a "delivery" teaching style instead of investment in modern technology Alhamd, Alotaibi, Mutually, & Zyadah, 2004), as well as the shortage of teachers qualified to use the technology confidently Sager, (2001). (Ghavifek, Kunjappan, Ramasmy and Annreetha, n.d)

It is very important for the Performing Arts department, as well as the faculty of Arts and Social sciences, and the university administration to take caution while planning for the students' academic programs! The need to providing pedagogical training for teachers, in addition to training them to use ICT tools, is a very important issue. Simin et al. (n,d), quotes Cox et al. (1999) saying that that if teachers are to be convinced of the value of using ICT in

their teaching, their training should focus on the pedagogical issues. The results of the research by Cox et al. (1999) showed that after teachers had attended professional development courses in ICT they still did not know how to use ICT in their classrooms; instead they just knew how to run a computer and set up a printer.

For this reason, it is important to note that training, guiding and preparing teachers in the use of ICT in schools, is not a one event issue; but a continuous process.

> They explained that this is because the courses only focused on teachers acquiring basic ICT skills and did not often teach teachers how to develop the pedagogical aspects of ICT. In line with the research by Cox et al. (1999a), Balanskat et al. (2006) indicated that inappropriate teacher training is not helping teachers to use ICT in their classrooms and in preparing lessons. They assert that this is because training programs do not focus on teachers' pedagogical practices in relation to ICT but on developing ICT skills. Simin et al

The researcher is hopeful that this study will be very helpful to the department of the performing arts and the whole community of Kyambogo University as well as to other institutions in the training of not only teachers at the diploma and degree levels, but also training lecturers and instructors at the masters and doctorate levels. For, when there are new tools and approaches to teaching, teacher training is essential if the trained teachers are to integrate the ICT skills into their teaching. However, inadequate or inappropriate training leads to teachers being neither sufficiently prepared nor sufficiently confident to carry out full integration of ICT in the classroom, (Ghavifek, Kunjappan, Ramasmy and Annreetha, n.d)

Hence a need for the department of performing arts to give priority developing Music ICT skill to all of its music instructors, as well as giving appropriate orientation to the new instructors. Let us not take things for granted that every instructor is competent in the use of ICT. Nor should we be tempted to rely on only a few of the instructors who have shown the interest or demonstrated ability to use ICT in music education. If possible and with time, given favorable factors, conditions, ICT in music compliance, could be made a pre-requisite for any music instructors in the department to step in the class.

2.4.6.2 Inadequate technical support

Inadequate technical support is one of the major factors, that have not only delayed, but also still hindering integration of ICT in music education at Kyambogo University. Without both good technical supports in the classroom and whole-school resources, teachers cannot be expected to overcome the obstacles preventing them from using ICT Lewis, (2003). Pelgrum (2001) found that in the view of primary and secondary teachers, one of the top barriers to ICT use in education was lack of technical assistance, (Ghavifek, Kunjappan, Ramasmy and Annreetha, n.d) .

2.4.6.3 Limited time

Time constraint has been identified as one of the most factors hindering proper use of the ICT among the students. A significant number of researchers Al- Alwani, (2005); Becta, (2004); Beggs, (2000); Schoepp, 2005; Sicilia, (2005), have indicated that many teachers have competence and confidence in using computers in the classroom, but they still make little use of technologies because they lack the time, Simin et al. (n,d) have identified time limitations and the difficulty in scheduling enough computer time for classes as a barrier to teachers' use of ICT in their teaching. The most common challenge reported by all the

teachers was the lack of time they had to plan technology lessons, explore the different Internet sites, or look at various aspects of educational software.

2.4.6.4   Lack of teachers' competency

Another challenge directly related to teacher confidence is teachers' competence in integrating ICT into pedagogical practice. Many teachers lack knowledge and skills to use computers and are at times an enthusiastic about the changes and integration of supplementary learning associated with bringing computers into their teaching practices, (Ghavifek, Kunjappan, Ramasmy and Annreetha, n.d)

In this digital revolution era, we are blessed to have music instructors who are computer compliance. The only challenge has been on the university's lack of ICT music instruments for the instructors to practice and polish their skills.

To this effect, the researcher has observed that most universities in Uganda have quality assurance departments to evaluate their lecturers/instructors/teachers competence. Experience has shown that a teachers endowment with knowledge and skills, is one aspect and the ability to transmit the same knowledge to the students is another issue.

> Current research has shown that the level of this barrier differs from country to country. In the developing countries, research reported that teachers' lack of technological competence is a main barrier to their acceptance and adoption of ICT Pelgrum, 2001; Al-Oteawi, (2002). In Syria, for example, teachers' lack of technological competence has been cited as the main barrier Albirini, (2006). Likewise, in Saudi Arabia, a lack of ICT skills is a serious obstacle to integration of technologies into science education Al-Alwani, (2005); Almohaissin, (2006). Empirica (2006) produced a report on ICT use in European schools. The data

used for the report came from the Head Teachers and Classroom Teachers Survey carried out in 27 European countries. The findings show that teachers who do not use computers in classrooms claim that "lack of skills" are a constraining factor preventing them from using ICT for teaching (Ghavifek, Kunjappan, Ramasmy and Annreetha, n.d).

It is very important for the university to engage the public relations/marketing and quality assurance departments in all of the faculties and departments regular meetings and planning for recruiting, motivation and evaluation of lecturers and instructors.

2.4.7 ICT Music pedagogy

Music schools have a big challenge to come up with appropriate music vocation pedagogy relevant to the contemporary music students, Wise, Greenwood, and David, (2011) state that Various commentators e.g. Prensky, (2001, 2009;) Jonassen et al., (2003) stress that the students attending our 21st century schools are products of the digital age in that they have spent their lives surrounded by and using computers, video games, digital music players, mobile phones and all the other tools and paraphernalia of what is also called the information age.

A particular challenge that technology brings music teachers is that of finding ways to bring into the school setting the knowledge that students develop outside of school about digital music composition and production. A subsidiary challenge is that of moving technology from its position as an 'add-on' in the music curriculum to a position of being embedded within the curriculum, (Wise, Greenwood and Davis, 2011)**.**

For students of today do not know a world without the digital technologies associated with music making and listening – among them computers, electronic keyboards, MP32 files and players, compact discs, the internet, and a range of other digital music devices and formats Webster, (2002).   Furthermore, it is being predicted that these students and their children will, in time, come to know and use technology for producing and communicating music that are barely understood or even conceived of today.

From the above insights, music schools have two options. i) Curriculum change is necessary if the world of the classroom is going to keep pace with the world outside. ii) It is necessary to have a clearly defined theory which allows teachers to commit themselves intellectually to the change.

As music schools embark on putting in place new music curriculum and theory, Wise, Greenwood, and Davis, (2011)   says that we might be required to answer the following questions: Is technology a new means of serving traditional goals in music education or can it offer us something different? Can teachers use technology to bring 'real world' experiences for example, students composing and recording songs and then posting them on YouTube, and other social media channels like; Facebook, e-mail, web page Instagram etc. into the classroom.

While talking about pedagogical use of the new technologies Wise, Greenwood, and Davis, (2011) quotes Way and Webb (2007) whose study suggest that much of the material reviewed generally distinguishes between practice involving teacher-centered approaches and practice involving student-centered approaches.

That the study identifies the potential of ICT to transform pedagogy in the following ways: A shift from instructivist to constructivist educational philosophies; a move from teacher-

centered to student-centered learning activities; and a shift from a focus on local resources to global resources; an increased complexity of tasks and use of multimodal information.

Much of the research on teachers' use of ICT in their teaching describes low level of usage and minimal pedagogical change (Wise, Greenwood and Davis., 2011). That much of the research surrounding teachers' adoption of ICT does not consider socio-cultural theory, which clarifies that processes of change in schools and classrooms cannot be understood in isolation because of the influence of regulatory frameworks and policies of national education systems and national cultures. Hence, although teachers' beliefs and attitudes and their confidence and competence with ICT remain centrally important in their adoption of ICT into their pedagogy, teachers are not 'free agents'. Rather, that their use of ICT for teaching and learning depends on the 'inter-locking cultural, social and organizational contexts in which they live and work.

For this reason, the use of ICT in music education in the department of Performing Arts ought to be a combined effort of all stakeholders, i.e. students, music instructors, and administrators in the department, faculty, Registry, university management and the policy makers. The same principal could as well be applied to the music education as a subject in all of the Primary and Secondary schools and the Teacher Training Colleges in Uganda.

While talking about pedagogical uses of ICT in secondary music education, says Wise, Greenwood, and Davis, (2011) that, the implementation of ICT in the music classroom is now the accepted points out a number of international studies describing research surrounding this implementation and how it may be used to meet specific curriculum requirements Busen-Smith, (1999); Mills & Murray, (2000); **Odam, (2000), (2004);** Pitts & Kwami, (2002); Ho, (2004); Gouzouasis, (2005); Savage, (2005a); Crow, (2006). That many

of these reports relate directly to the use of ICT in raising achievement in composition Berkley, (2001); Pitts & Kwami, (2002); Berkley, 2004; Crow, (2006). Some studies refer to developing performance skills Chan et al., (2006) whilst others refer to the development of wider musical literacies that students may develop in the modern music classroom Savage,(2005); Crow, (2006).

Further research has examined the changes to pedagogical practice that teachers may need to make as a result of the technology being used in their classrooms Beckstead, 2001; Byrne & MacDonald, (2002); Pitts & Kwami, (2002); Savage, (2005a, 2005b); Crow, (2006); Bernard, (2007); Woody, (2007). As a word of caution, Wise, Greenwood, and Davis, (2011) mentions that many music teachers are products of the Western classical tradition, which is based largely on the conservatoire and the associated skills and traditions that this brings with it. Hence, such teachers may have difficulty understanding the need to use ICT in the classroom or may accept or welcome its use but not be comfortable to operate in a genre that is foreign to them. That often too, they have difficulty in understanding or accepting the contexts and genres in which the students wish to work.

> One of the real challenges facing music teachers will be to create scaffolding structures that will allow students the freedom to express their creativity in contexts that are relevant to them and support this with knowledge, skills and resources appropriate to what the students are doing Hargreaves et al., (2003). Teachers may need to be prepared to broaden their understanding of what constitutes composition and performance in light of the changing practices that ICT can bring to music in its various genres Savage, (2007). Using technology may make teachers rethink instructional practice and transform the way they have done things for many years Bauer et al., (2003). Therefore there is a need to hear

teachers' voices about their practice in music classrooms in the 21st century, (Wise, Greenwood and Davis., 2011).

2.5 The need to evaluate the use of ICT in the teaching/ learning of Music

We have identified above, the role of ICT in music composition and production as well as the role of multimedia in education institution music program. It is proper also to consider the effectiveness of ICT, to justify the integration of ICT in schools.

So how can the department of Performing Arts best benefit from the music vocation pedagogy involving the contemporary digital music technology? Integration of information, communication, and technology (ICT) will assist teachers to attain the global requirement to replace traditional teaching methods with a technology-based teaching and learning tools and facilities. ICT is considered as one of the main elements in transforming the country to the future development, (Ghavifekr and Rosdy , 2015)

Ghavifekr and Rosdy (2015) say that in this 21st century, the term "technology" is an important issue in many fields including education. That this is because, technology has become the knowledge transfer highway in most countries. Technology integration currently has gone through innovations and transformed our societies that have totally changed the way people think, work and live.

In a similar study, Viig (2015)quotes Ghavifekr, Afshari & Amla Saleh, (2012) saying that schools and other educational institutions which are supposed to prepare students to live in "a knowledge society" need to consider ICT integration in their curriculum.   Integration of information, communication, and technology (ICT) in education refers to the use of computer-based communication that incorporates into daily classroom instructional process.

In conjunction with preparing students for the current digital era, teachers are seen as the key players in using ICT in their daily classrooms, (Ghavifekr and Rosdy , 2015).

Kyambogo university, department of Performing Arts should also aim at preparing students to live in "a knowledge society" it needs to consider ICT integration in their curriculum more especially in the music program where ICT in not included in their syllabus.

2.5.1 The Effectiveness of Integrating ICT in Schools

We may possibly be awaiting the death knell of music education in schools within our lifetime unless radical changes to pedagogy and curriculum occur as rapidly as digital technologies are emerging.

> School music" and "real music" is another false dichotomy that needs to be reconsidered and dissipated. Popular music that is "real music" has not been a part of the curriculum since the turn of the 20th century. Music programs are among the first to be cut from school district budgets and the relevance of "school music," in the traditional sense, is not as secure as some colleagues may believe it is in different parts of the world (Gouzouasis, 2011).

There ought to be a paradigm shift in the digital music pedagogy, if we are to adequately respond to the Technical Education and Vocation Training needs of the 21st Century. Much music pedagogy adjustment and curriculum review has been done in the developing courtiers to upgrade music education. As usual, developing countries like Uganda are now just beginning to wake up. However, with the contemporary globalised and ICT revolution, Uganda will not remain the same.

Indeed, in the last decade, digital technologies have fundamentally changed music making, sharing, teaching, and learning and it is rapidly evolving. An unprecedented renaissance of social music making is taking place through the use of musical games, apps, and networked digital tools (Peter Gouzouasis and Danny Bakan, 2011).

There are a lot of implications that the digital technologies may have for the future of music curriculum and praxis in the department of Performing Arts at Kyambogo University. It is imperative that modern Educators express a call for a fundamental rethinking of our basic assumptions about pedagogy and learners, as well as what we as educators view as "valid" musical expression. In a similar voice, Gouzouasis, and Bakan (2011)from Hong Kong states thus: "Nowadays much attention is paid to the construction of learning environments that integrate new technology, including CD-ROM, Digital Video Discs (DVDs), the internet, web project development and multimedia, into today's classrooms. From pre-school to university education, teachers have significantly increased their use of multimedia **technology to enrich the learning and teaching environment."**

2.5.2 Challenges in using ICT in teaching and learning

Integrating ICT into teaching and learning is a complex process and one that may encounter a number of difficulties or challenges - any condition that makes it difficult to make progress or to achieve an objective. Below are some of the key challenges that, Ghavifker, Kunjappan, Annreetha (n, d) were able to identify in their study, limited accessibility and network connection. Several research studies Sicilia's study (2005), Becca (2004), Empirica's (2006), Korte and Hüsing (2007, p. 4), Pelgrum (2001), Toprakci (2006), Al-Alwani (2005), and (Albirini, 2006)indicate that lack of access to resources, including home

access, is another complex challenge that prevents teachers from integrating new technologies into education. Various research studies indicated several reasons for the lack of access to technology.   The inaccessibility of ICT resources is not always merely due to the non-availability of the hardware and software or other ICT materials within the school. It may be the result of one of a number of factors such as poor resource organization, poor quality hardware, inappropriate software, or lack of personal access for teachers, (Ghavifek, Kunjappan, Ramasmy and Annreetha, n.d)

Ghavifker, Kunjappan, Annreetha (n, d) highlights one example of the challenges leading to lack or low accessibility to computers in schools. They quote Pelgrum (2001) who explored practitioners' views from 26 countries on the main obstacles to ICT implementation in schools and concluded that four of the top ten barriers were related to the accessibility of ICT. These barriers were: insufficient unit of computers, insufficient peripherals, insufficient numbers of copies of software, and insufficient immediate Internet access. Other challenges include low numbers of computers, oldness or slowness of ICT systems, and scarcity of educational software in the school.

Given the fact that Uganda is one of the poor countries in the developing world, the above mentioned challenges are a common scenario, more especially, in the Department of the Performing Arts, leading to the underutilisation of ICT in Music Education. However, in the light of the contemporary digital revolution paradigm shift, one of the priorities needed to alleviate the above scenario, is a changed attitude and mind set. This research project ought to create availability of adequate ICT equipment in the above department as one of the **solutions to underutilisation of ICT in music education.**

2.5.3 Schools with limited technical support

Kyambogo University has responded positively to the need of providing internet connection to the Department of the Performing Arts. Though the signal was still poor at the time the researcher conducted study, there is hope for improvement.   In a situation similar to the department of the Performing Arts experience, Ghavifker, Kunjappan, Annreetha (n,d),quotes Sicilia's study (2005), saying that technical problems were found to be a major barrier for teachers to use ICT in schools. Such technical barriers included waiting for websites to open, failing to connect to the Internet, printers not printing, malfunctioning computers, and teachers having to work on old computers. Indeed, Kyambogo University is not any better from this description. "Technical barriers impeded the smooth delivery of the lesson or the natural flow of the classroom activity.

CHAPTER THREE

METHODOLOGY

3.0   Introduction

This chapter provides a description of the research methodology and design used in the study to gather both primary and secondary data. It contains the study population, sampling technique, methods of data collection, instruments of data collection, procedures of data collection, and data analysis.

3.1   Research Design

This research used participatory or collective method to collect and analyze the data obtained from all the respondents. The analysis tool was designed specifically to address research objectives with regard to integration of ICT in the teaching/learning of music education.

3.2   Implementation of Action Research

A mixture of data collection methods was used. These are; observation, future workshop, work process analysis and interviews to instructors and students. This study focused on the use of ICT in the teaching and learning process of music to enhance competence in music composition and production in the department of Performing Arts at Kyambogo University.

3.3   Population

The target population included instructors and students of Performing Arts department at Kyambogo University.The population group comprises of six programs namely; Masters of Arts Music Education (MAME), Post Graduate Diploma in Education (PGDE); Post Graduate Diploma in Teacher Education (PGDTE), Bachelor of Teacher Education (BTE),

Bachelor of Education (B.Ed.) and Diploma in Education Secondary (DES) see the table

below;

Table 2 : Population and Sample size

Population	Number of students	Sample Size	Sampling Technique
Masters in music education	12	0	Purposive
Post graduate diploma in education (PDGE)	1	0	Purposive
Post graduate diploma in education (PGDTE)	1	0	Purposive
Bachelor of Teacher Education (BTE)	11	8	Purposive
Bachelor of Education B.Ed.)	9	7	Purposive
Diploma in Education Secondary (DES)	15	5	Purposive
Administrator and lecturers	15	3	Purposive
Total	**64**	**23**	

3.4.1. Sampling Technique

The Researcher used purposive sampling technique. Purposive sampling is one of the most

cost-effective and time-effective sampling methods available. Purposive sampling may be the

only appropriate method available if there are only limited numbers of primary data sources

who can contribute to the study. This sampling technique can be effective in exploring

anthropological situations where the discovery of meaning can benefit from an intuitive

approach.

In purposive samples the researcher uses the best judgment to decide which elements are

most representative of the population and include them in the sample. The main goal

of purposive sampling is to focus on particular characteristics of a population that are of

interest, which will best enable you to answer your research questions. Rather, it is a choice, the purpose of which varies depending on the type of purposing sampling technique that is used.

The sampling group comprised of three programs namely; Bachelor of Teacher Education, Bachelor of Education, and Diploma Education Secondary. The researcher purposely chose three staff members; An administrator, one lecturer who teaches music composition and production to post graduate students at the performing Arts department and another lecturer who teaches the same course to undergraduate students in the same department.

For the purpose of this study, the researcher fulfilled the requirements of objective three, to evaluate the use of ICT in the teaching/learning of music composition, and production, by conducting an evaluation exercise. The evaluation exercise focused on students who were involved in the study right from the beginning during the situation analysis and future workshop in the 2017/2018 second semester at the time they were studying their 1st and 2nd years respectively.

By the time of conducting the evaluation exercise, the 2nd year students mentioned in the sample population had already completed their studies. The researcher used the students' evaluation tool to interview them on telephone. In addition the researcher administered an oral interview to some students.

3.5   Methods of data collection

The Researcher used the following methods to collect data: Work process analysis, future workshop, interview and observation.

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3.5.1 Work process analysis

A participation tool was designed to identify the boundaries of the study, establish the current state and condition of the Performing Arts department. Identify the major and significant areas requiring attention, key stake holders, stakeholders' interests, potential impact and influence.

The work process analysis was carried out at the department of Performing Arts in Kyambogo University, whose results indicated underutilization of ICT in the teaching and learning of music composition and production as a major concern in the Performing Arts department. This concern was later presented in the future workshop to determine the objectives of the study.

3.5.2 Interview

Structured interview was one of the methods the researcher used to collect data. A structured (or standardized) interview is one in which every effort is made to exclude procedural reactivity by asking every subject exactly the same question in the same way and in the same order. An interview is a method of collecting data from a subject by asking questions in a face-to-face situation. The researcher had a face to face conversation with the stakeholders for the purpose of exploring issues in detail.

According to the nature of interview technique; being quite flexible and adaptable it helped the researcher to obtained information in detail and well explained. This information was obtained through probing for specific answers. The researcher observed non-verbal behaviour of respondents like facial expressions and gestures which helped supplement the researcher's interpretations.

3.5.3   Observation

The Researcher observed, technology used (the tools and equipment) in the institution. From this observation, she gathered sufficient information to relate data gathered from interviews. The researcher used the above methods of data collection because they were best suited for a case of the Department of Performing Arts.

3.6.   Tools of data collection

There are various tools that can be used to collect data while conducting an Action Research. For this study, the researcher used interview guide, and observation checklist purposely to have a face to face conversation as to obtain information in detail.The researcher also wanted to assess non-verbal behaviour of respondents to supplement her interpretations.

3.7 Data analysis

The raw data of this study was qualitative. It included observations from the assigned action plan assignments to the stakeholders as well as responses of the participants from the interviews. It consisted of the action plan outcomes and responses from two major sources. i) The observation checklist of future workshop assigned responsibilities outcomes. ii) Evaluation guide. The analysis and the interpretation of data was guided by the purpose statement, objectives all the way from both the interview evaluation tools, the specific research questions that were generated at the beginning of study in the work process analysis and future workshop.

After the responses from the observation checklist, cameras and telephone calls, instructors and students' evaluation tool had been gathered; the researcher corded and processed them before analyzing them. The processing consisted of arranging or converting the raw data into

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systematic categories of analysis and aligned with the future workshop action plan outcomes according to the study major three objectives, making sure not to lose sight on the distinction between reactions of the various segments of the samples. After the responses from the students evaluation tool had been gathered; the researcher recorded, totaled, complied in percentages, and then represented on bar graphs. Results from the observation checklist, cameras and telephone calls, were compared with the responses revealed in the interviews; and the various differences, likeness and misperceptions noted. Data was then processed and organized in order to scrutinize unnecessary irregularities

3.8 Ethical consideration

Permission to conduct research in the Department of Performing Arts at Kyambogo University was sought and granted. **See Appendix A.** Democratic participation of all stakeholders was observed by the researcher. The researcher sought permission from the participants to use their photos for representation of their views and evidence of their participation and to use their views for dissemination of the information and the participants accepted.

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CHAPTER FOUR: IMPLEMENTATION, PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.1   Introduction

In the implementation phase, stake holders carried the solutions to the causes of underutilization of ICT in the teaching and learning of music composition and production which were identified in the utopian phase, to implementation phase. Below are the solutions.

There should be adequate capital for infrastructural development, adequate resource books for reference, adequate teaching/learning resources that is composition and production software programs, ICT should be allocated time on the timetable and the Performing Arts Department should be connected to internet. More computers should be added in the department.

Stakeholders suggested that the following should be done in order to achieve the solutions above. Contacting appropriate authority to secure space in the new block for teacher education, improving on the new computer room by removing some items and transferring them to another room, Consulting library for the computer resource and reference books, producing handouts connected to music composition and production. More computers to be installed in the music computer laboratory, internet to be connected to the Performing Arts department, students to be encouraged to use their own computers in the programs, installing relevant software for music composition and production both on the departmental computers the ones for students and revision of the departmental timetable to create time for ICT course unit.

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An action research work plan was made. It indicated who does what, where, when, and how

to implement the best ideas as indicated in the table below.

Table 3: Action research work plan for Performing Arts Department (Future workshop

2018)

Activity	Responsible Person	Timeframe	How	Where
1.Contacting DVC Academics for Space	Head of department/Beatrice	2nd – 9th Feb. 2018	writing letter/face to face	Admin off.
2. Improving on the new computer room by removing some items and transferring them to another room.	Ms Kyosaba Beatrice	2nd – 9th Feb 2018	Contacting the head of department	Department of performing Arts
3. Contacting Library for Ref. books	Mr. Nicholas Busobozi	2nd – 9th Feb. 2018	writing letter/face to face	Library.
4. Access to other University comp. labs	Mr. Nicholas Busobozi	2nd – 9th Feb. 2018	writing letter/face to face	Arts/SS Faculty.
5. Asking Students to bring personal devises	Mr. Nicholas Busobozi	2nd – 9th Feb. 2018	writing letter/face to face	Music Dep.
6. Installation of relevant music software	Dr Ekadu Peter /Busobozi	2nd – 9th Feb. 2018	Using Procured CDs	Music Dep.
7.Creating more time for ICT on Timetable	Dr Ekadu Peter	2nd – 9th Feb. 2018	Revising Time Table	Music Dep.
8.Internet Connection	Ms Kyosaba Beatrice	2nd – 9th Feb. 2018	writing letter/face to face	Estate/internet of.
9.Evaluation	Ms. Kyosaba Beatrice	2nd Feb – 4^{th}March	Stakeholders meeting	Music Dep.
10. Producing hand-outs connected to mus. comp. and production	Mr. Busobozi Nicholas	2nd Feb – 4th March	writing letter/face to face	Contacting internet office
11. More computers to be installed in department.	Head of Department	2nd Feb – 4th March	Writing letter/face to face	Procurement office.

4.2 Action Implementation

The interventions or actions that were agreed upon by the stakeholders to be implemented in order to integrate ICT in the teaching and learning of the composition and production of music were carried out as follows.

Table 4 : Implementation of actions (from future workshop 2018)

Action	Implementation
1. Contacting appropriate authority to secure space in the new block for teacher education.	We managed to secure a room for the music studio and students are utilising it for their music composition and production lessons.
2. Students to use their private computers in the music composition and production program	Students were encouraged to use their personal laptops and smart phones to increase accessibility of the music composition and production software.
3. Improving on the new computer room by removing some items and transferring them to another room.	This one was not done because it was planned as an alternative in case we do not get a room.
4. Performing Arts department to access to other University computer laboratories.	The Performing Arts department was able to access other university computer laboratories. The faculty of Arts and social sciences computer laboratory was contacted and permitted our music students be using the laboratory for practical examinations of music composition and production. It has over 20 computers. The Music department also contacted department of Distance Education in the Faculty of Education, and permitted our students to use their digital audio and video studio for both practical work studies and practical examinations. This studio is well equipped with the following: a) Over 20 computers b) Digital High definition (HD) video cameras. c) Reflectors d) Projectors e) Two big digital screens f) Studio mixer, speakers and others.
5. Consulting library for	The library was consulted, but the books for music

the digital composition and production resources (CDs) & DVDs) and reference books.	composition and production were not there. The good news is that the composition and production resource reference books are available in the mini library of the music department. The books can easily be accessed by both lecturers and the students.
6. Producing handouts connected to music composition and production.	Finale Notepad Tutorial guidelines notes were provided to students and are available but on sale.
7. More computers to be installed in the music computer laboratory.	The university has promised to avail the Performing Arts department with more computers. The Computers will be installed in the music computer lab as soon as they are availed. As per now, we are optimally utilising the two computers that are available in the music computer laboratory together the 20 computers in the Faculty of Arts and Social sciences, and 20 more computer in the Department of Distance Education, Faculty of Education.
8. Internet to be connected to the music department.	The University has managed to install internet connection for the department of Performing Arts. The only challenge is that the signal is very poor.
9. Installing relevant software for music composition and production both on the departmental computers, and the laptop computers owned by the students.	The following relevant software for music composition and production was installed on 40 computers in other university faculties, as well as on student's personal computers and smart phones to enable students access the music software easily and at any time they need it. a) Finale 2017, b) FL Studio c) Lead studio 11, d) Adobe premiere cc 2018 for video editing and after effect, e) Adobe illustrator, f) Adobe photo studio, for photos, g) Dream weaver-a search engine for searching internet in music, h) Audacity 2017 for sound,
10. Revision of the depart- mental timetable to create more time for ICT music practical.	Timetable was revised a 3 hours lesson for ICT in music composition and production was created for the B.Ed. students.
11. Evaluation	Evaluation was done whose results are indicated in this table.

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4.3 Evaluation, Presentation and discussion of findings

Evaluation was among the eleven assignments allocated to the stakeholders during the future workshop. The responsibility of carrying out the evaluation exercise was assigned to the researcher. The implemented actions were evaluated. During the evaluation exercise the researcher was guided by the following: Students' evaluation tool, observation checklist, and Instructors' evaluation tool.

The researcher and her project principal supervisor met some stakeholders in the department of Performing Arts to ascertain the progress of the project what came out of the meeting was also included in the findings. The researcher designed three research tools to evaluate the project. These were; observations check list, the instructors' evaluation tool, and the students' evaluation tool.

The observation check list was designed following the outstanding outcomes from the data collection tools in the entire study. The researcher administered the instructors 'evaluation tool to all of the three instructors in the sample group.

The researcher administered the students' evaluation tool to twenty (20) students out of 56 students in the following categories as indicated in the table below:

Table 5: Stakeholders involved in the evaluation

Stakeholder category	Number of students in the program	Number of 1st year students interviewed	Number of 2nd year students interviewed	Total Number of students interviewed
B.Ed. Students	9	3	5	8
BTE Students	11	5	2	7
Diploma	36	1	4	5
Total number of Students	56	9	11	20

The table above illustrates the stakeholders involved in the evaluation. Out of 57 students, the researcher interviewed 20 students. Out of the nine (9) B.Ed. students, (the official ICT in music class), the researcher interviewed eight of them,(three (3) students in the first year and all of the five (5) students in the second year.) Out of the eleven (11) BTE students, the researcher interviewed seven (7) of them, all of the five (5) in the first year, and two (2) students in the second year. Out of the 36 diploma students, the researcher interviewed five (5) diploma students (one (1) student who was in the first year and four students who were in the second year at the time of study.)

Data analysis of the observation checklist and the instructor's interview tool

The researcher basically looked at how the Action Research Project progressed in the time frame to analyze the observation checklist. The analysis of the findings was guided by the objectives of the study namely: to create availability of ICT equipment for music composition and production and guiding students on the use of ICT in the teaching and learning of ICT music composition and production.

4.3.1 Objective one: To create availability of ICT equipment for music composition and production

4.3.1.1Acquiring space for a music studio

The task of contacting the Deputy Vice Chancellor (DVC) Academics for space was assigned to the head of the department Performing Arts and the researcher. The head of the department wrote a letter to the DVC, through the Dean Faculty of Arts and Social Sciences, to request for additional space in the Teacher Education new building. Later the Head of department together with the researcher followed up the letter and met the DVC. The DVC said that we could not secure space in the Teacher Education new building because all of the rooms had already been allocated to other university users. But even then, the Dean managed to get us an alternative space.

At the beginning, the Dean had allocated us one room in the former transcript office block. The room was later reallocated to Kyambogo University SACCO (KYUSACCO) that needed a larger space. Hence The Dean allocated the room to KYUSACCO in exchange with the present two rooms that are now allocated for the music studio space as indicated below.

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Figure 3: Researcher and the instructor in the music studio of the department of performing Art. (2018)

During the process of following up on the progress of the process to secure additional music studio space, the researcher encountered the challenge of a slow information flow patterns, characteristic of most developing countries like Uganda. However working in the spirit of team work and corporation with the entire department of Performing Arts stakeholders, the researcher won their confidence. It is the African spirit of communitarianism, as portrayed in the virtues of humility, patience, respect, resilience, industriousness and integrity that helped us to succeed.

The researcher enjoyed support from the students, department of Performing Arts non-teaching staff, lecturers and instructors, as well as university administrators and managers in the team work under the true African spirit of communitarianism. Under communitarianism and the Bantu people group's 'Obuntu' philosophy; people in a community are obliged to promote a sense of belonging and inter-dependency. Hence the saying "I am because we

are," and "because we are therefor I am!" This is the secret behind the jovial and ambience strength that led to the success of attaining not only the additional space for the studio, but also the subsequent tasks that were assigned to the researcher by the stakeholders in the workshop!

The stakeholders in future workshop saw a need for additional space for the purposes of establishing a fully furnished music studio to aid the teaching and learning of music composition and production. This would imply acquiring computers and other digital equipment. We are very grateful to Dean Faculty of Arts and Social Sciences for giving two rooms to Performing Arts Department. Students are utilizing it for their music lessons. This is a great achievement. Given the importance attached to the need for the department of performing Arts to own a fully equipped music studio, Kyambogo University should take it up as one of its priorities in the 2019/2020 financial year budget.

Creating space for computer laboratory and music studios was one of the basic steps required to bring ICT services nearer to the students learning environment to enhance competence in the teaching and learning of music composition and production. Limited access to computer laboratory and software was the second biggest challenge (35%). This implies that; with availability of adequate ICT music equipment specifically for Performing Arts department students can acquire competence in music composition and production.

The music department has already started executing plans to furnish the music studio. The music instructor said that the size of one of the rooms has already been measured for the purposes of designing it into music studio. The establishment of the music studio fully furnished with computers and the music equipment will greatly help the students to have ample time to study as well as practice the ICT music software on their own so as to acquire

more knowledge and skills to enhance their competence in music composition and production.

In addition for the need for additional space the stakeholders in the department of Performing Arts agreed in the meeting with the researcher to acquire more ICT music equipment for the music studio. Later, the researcher together with the stakeholders in the department of Performing Arts went ahead to plan for new music equipment to facilitate the teaching of music in the department. (**See Appendix E**: A copy of the requisition letter).

The department of Performing Arts has so far received some music equipment that it requested from the university administration. A new Keyboard MIDI controller, Sound card, and Studio monitors have been delivered at the Performing Arts department. Our music students have started utilizing the two rooms and the music studio equipment for their music composition and production hands on lessons as we wait for the department to fully furnish the rooms with ICT music equipment. The space and the music studio equipment are helping the instructor to guide students on how to use ICT in music composition as well as students to acquire knowledge and skills of using ICT in music to enhance their competence. will go a long way in boosting the teaching/learning of music to enhance competence in music composition and production.

Figure 4: Showing the newly purchased MIDI controller, (23rd Aug.2018)

According to, Marion Maiers,Pat Knight, Gerry White, (2009) more substantial gains in pupil attainment are achievable where the use of ICT is planned, structured and integrated effectively. Computers should be used to enhance aspects of teaching through the presentation of information in different ways and in different forms. Effective use of ICT can support the development of understanding across the curriculum.

Indeed in this digital era, ICT use in the classroom is being accepted globally as an indispensable revolution. For ICT is important for giving students opportunities to learn and apply the required 21st century skills. (Ghavifek, Kunjappan, Ramasmy and Annreetha, n.d).

4.3.1.2 Improving the Departmental computer room

The Future workshop assigned the researcher the task of improving the music computer room by removing some items and transferring them to another room. She was to contact the head

of department for execution. But this was to be done as it was an alternative should the university fail to allocate additional studio space. The researcher did not implement the assigned task when the university allocated additional space to the department.

4.3.1.3. More computers to be installed in the music computer room

The task of acquiring more computers to be installed in the department was assigned to the head of the department. The head of Performing Arts department presented this issue in the faculty meeting, it was discussed and two computers were put in the budget to be procured for the department. When these computers come, they will greatly aid the teaching and learning of ICT to enhance competence in music composition and production.

The department of Performing Arts currently has two computers. The two new computers that the university has promised to provide if added to the two computers in the department of Performing Arts will make a total of four computers. However, four computers is still a small number of computers compared to the big number of students in the department. The ideal number would be the ratio of one computer per five students. Hence with a total of about 83 students in the department, we need 16 computers. But for planning purposes, we could order for 20 computers in anticipation of 100 students in the subsequent admissions of the music students.

The major challenges that are usually experienced in the ICT training in schools are said to be existing at the implementation levels. The student-computer ratio (SCR) in Irish schools was 9.1:1 at primary level and 7:1 at post-primary level by 2008. Yet information available from the (Organization for Economic Co-operation and Development (OECD) suggests that countries that have taken the lead in the provision of ICT in schools are aiming for or achieving a SCR of 5:1.Science, (2008).

According to the 2018/2019 records, the Performing Arts department of Kyambogo University has a total of 83 students. But the department is now assured of having only four computers by next semester. This will give us a ratio of 20 students per one computer (20:1). Hence, the student-computer ratio (SCR) in the department of the Performing Arts at Kyambogo University is not good. If one compares the (SCR) of 20:1, in the department with that of the recommended (SCR) of 5:1, that is not good news at all. It is four times worse than the recommended standard!

The second challenge is the quality of the computers. The two computers we have in the department and the additional computers expected, have a small Random Access Memory (RAM) that can hardly operate the heavy music software. There is a need for the department to reconsider buying more computers of big RAM at least 16 GB capacity.

Integration of information, communication, and technology (ICT) will assist teachers to attain the global requirement to replace traditional teaching methods with a technology-based teaching and learning tools and facilities. ICT is considered as one of the main elements in transforming the country to the future development, (Ghavifekr and Rosdy , 2015).

In this 21st century, the term "technology" is an important issue in many fields including education because; technology has become the knowledge transfer highway in most countries. Technology integration has of late gone through innovations and transformed our society that has totally changed the way people think, work and live. Therefore, it is imperative for the schools and other educational institutions which are supposed to prepare students to live in "a knowledge society" need to consider ICT integration in their curriculum, (Ghavifekr and Rosdy , 2015).

4.3.1.4 Utilization of the students' personal private gadgets (computers and smart phones)

The task of requesting the students to bring their own personal devices (computers and smart phones) was assigned to the music instructor. The music instructor had the opportunity to meet the students in class and talk to them face to face. The instructor said that he requested the students to bring their personal laptops and smartphones and they brought them. Software was installed on the students' gargets to enable them access the software at any time of their convenience. This was purposely done to increase equipment for teaching/learning of music composition and production. It was very easy for the students with the private computers and smart phones to get the music software. But it was very difficult for the students without the private computers and smart phones to get the software.

The study findings indicate that students who had their personal laptops and smart phones moved an extra mile to interacting with more than two types of software. These students acquired more skills and knowledge in using different types of music software. On the negative side, not all students who got access to the software that was installed on the private gadgets. The students, who were not in possession of the personal computers and smart phones, were left out. They would also have been covered if there was a way of putting the software on CDs and DVDs.

 Most of these students were second year students who are going to graduate this year 2018. The researcher was able to interact with the pioneering class on the telephone for the purposes of evaluation. The students said that they are already utilizing the knowledge and the skills in training their students at their work places. They are composing and selling their compositions to other people. This is an indicator that if Kyambogo University provides the

Performing Arts department with adequate and quality ICT equipment, the department is capable of producing highly skilled and competent graduates who can compete in the highly competitive market economy and promote a positive image of Kyambogo University to .the outside world.

The second challenge was in the area of competence. Not all of the students who managed to get the software on their personal computers and smart phones, benefited. Much as the students had increased accessibility to the music composition and production software some students have not yet fully grasped the required skills to make use of the software. One student said that he had the music software on his smart phone but he doesn't know how to use it!

There is some success on this step, for the instructor to provide music software on the student's private computer and smart phones. However, when a student reports that he is not able to use the software in one year, it is a big challenge. It implies that learning did not satisfactorily take place with this particular student. One thing the researcher has learnt from this study is that such a case is not limited to only the department of Performing Arts in Kyambogo University. Hence, there is a need to balance between the role of teachers and the potential for technology to aid learning in a classroom.

While talking about the quality of higher music education learning and its relationship with multimedia technology, (Ho., 2007), says that, some of the students in his study thought that multimedia technology was not the decisive factor in higher music education learning. That the students pointed out, it is the quality of lecturers which was important while multimedia technology was only a teaching aid.

At the heart of these ideas is a shift away from thinking about higher music education learning as being solely concerned with the employment of multi-media technologies, towards understanding it more as a tool to assist in the all-important partnership between teacher and student. (Ho, 2007,).

4.3.1.5. Installation of relevant music software on the department computers.

The participants in the future workshop assigned to one lecturer and one instructor in charge of ICT in music the task of installing the music software on both the departmental computers. They were to use the procured CD's in the Music department.

Researcher's observation:

The exercise of installing relevant software for music composition and production both on the departmental computers, and the laptop computers owned by the students was carried out successfully. The students were encouraged to use their own computers in the learning process of music composition and production. The following relevant software for music composition and production was installed on 24 university computers, as well as on student's personal computers and smart phones to enable students access the music software easily and at any time they need it: Finale 2017, U-lead studio 11, Adobe premiere cc 2018 for video editing and after effect, Adobe illustrator, Adobe photo studio, for photos FL studio.
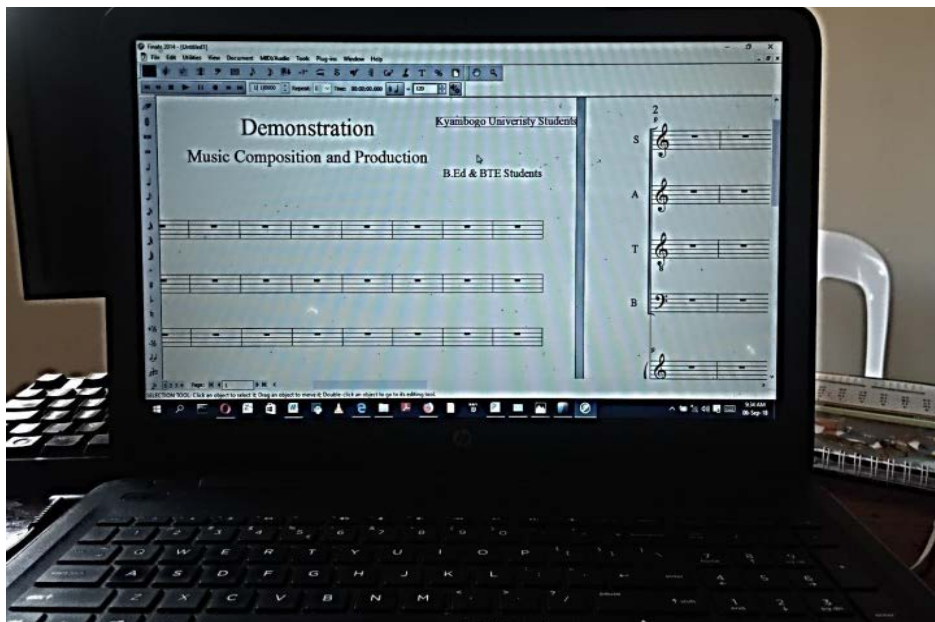
Figure 4.5: Finale Notepad software (on 16th August 2018)

Figure 4.6: FL studio software (on 16ᵗʰ August 2018).

Responses from the Administrator and Instructors:

The researcher posed the following questions to the administrator and instructors in a questioner.

Question Thirteen: What can students do with the software they have been using?

Answer: They can do the following:

- Compose and Produce music for own performing

- Can use Music software to write melodies

- Can use music software to do harmony

- Can use it in the teaching and learning process

- Can use it to produce and record music in the community

Question Fourteen: How many software can they comfortably interact with?

Responses from the students: (See students' interview responses from the evaluation tool on 4.2.2).Below is the summary of the responses from questions 4, 5, 6, and 7.

In response to the types of music software that the students use, 70% mentioned at least one. The biggest number of students (60%) said that they were mostly exposed to only two types of software, (Finale &F.L. Studio).Out of these, 5% mentioned that they can operate 4 software, 10% can operate 3, 20% can operate 2 and 25% can operate one. In a similar magnitude, 35% had done at least one project, 15% two, 5% three and 5% five (giving a total of 60% representing the students who had developed hands on experience and competence). However, 30% of the students in the whole class,30% could not operate comfortably any software and had not done any project! There is a need for the department to put in place strategies help the 30% group of students that had not yet done any project.
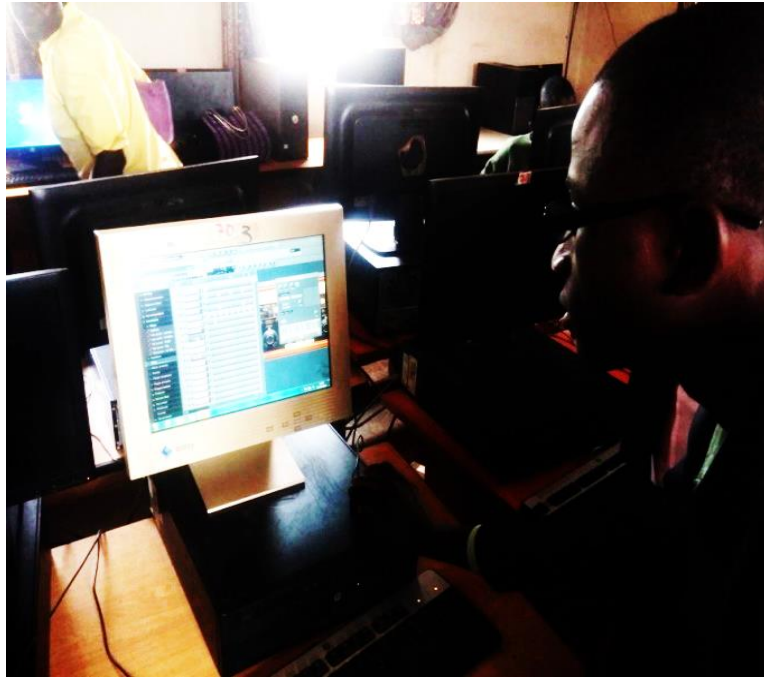
Figure 4.7: A student working on a music project during the evaluation.

It is evident that learning took place. This being a pioneer class, there is still ample time for improvement. For the greatest thing in this world, is not the position where one is standing, but the direction where one is moving. Similarly, this pilot project has not generated 100% success. But the good thing is that, the researched findings indicate, substantial achievement. This has set a very good foundation for future improvement.

4.3.1.6 Provisional University Computer Laboratories

The task of accessing other University computer laboratories was assigned to the music instructor. The stakeholders during future workshop assigned the music instructor to write a letter to the Faculty of Arts and Social Sciences or to meet the responsible person and request permission for our students in the music department to be using the computer laboratory that belongs to Faculty of Arts and Social Sciences. The department of Performing Arts

approached the Faculty, and permission was granted for the music students to be using that laboratory. This particular computer laboratory has 20 computers.

At the same time, the music instructor said that the head of department of Performing Arts approached Dr Ndawula in the department of Distance Education, faculty of education to grant us permission for our students to be using their departmental digital audio and video studio for music production. Permission was granted and our students have been using the facilities basically for music, composition, editing and production, practical work studies and practical examinations. This studio is well equipped with the following: i) Over 20 computers, ii) Ten digital high definition (HD) video cameras, iii) Two light reflectors for assisting video and still photography cameras, iv) Two projectors, v) Two big digital screens, vi) One studio mixer, vii) speakers, viii) CD burner. Some of the above mentioned equipment is indicated in the photo below.
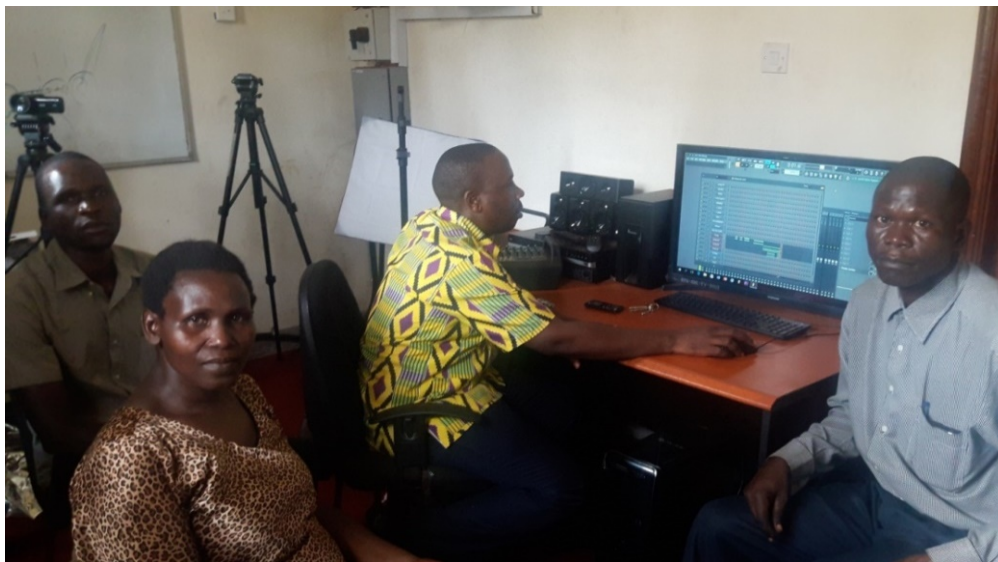
Figure 4.8: Two students, a researcher and an instructor in the studio.(2018)

Figure 4.9: Evaluating students' competence in music production.(on 18th August 2018)

Much as permission was granted for the department to be using the two computer laboratories, there were two major challengesthat hindered the music students from fully benefiting from the facilities. First of all, the students could not get easy access to the laboratory all the time.

Secondly, the computers in the two computer laboratories mostly did not have enough RAM to run the heavy music software.Much as we are rejoicing for the granted permission for our students to be using computer laboratories of other university departments, the truth is that the music department is overburdening them. Most of the computers in those computer laboratories are not compatible with most of the Music software. The computers have a small storage RAM capacity of 2 GBs. But the music software requires a computer with a RAM of 16 GBs. Hence such 16GB software makes the computers of 2 GBs run on a very slow speed.

One student and the instructor said, "There is only one computer in the distance Education computer laboratory that has a big RAM and high speed compatible with the music software.

Another student said that the laboratory attendants of the computer laboratories in the other university computer laboratories that are hosting the music students have started complaining of our over staying their hospitality.

Similar to the above voices, the music instructor said that the music software is usually uninstalled, and hence he has to keep on reinstalling the software, especially when the students have to do practical examinations.

4.3.2. Objective two: To guide students on the use of ICT in music composition and production

4.3.2.1 Library music digital resources and reference books

The assignment of contacting the library for reference books was assigned to the music instructor. He was to write a letter to the University librarian, or to meet him or her. The instructor said that he went to the university main library, but did not find there the relevant books for music composition and production. However, he said, the department of Performing Arts has a muni library from which the students and lecturers can easily access them. The books can easily be accessed by both lecturers and the students. Secondly, the music instructors and the students can easily access the books online internet.

4.3.2.2   Response from the Administrator and Instructors interview:

For the purposes of evaluating this item, the researcher posed the following three questions to the instructors in the evaluation tool.

Instructors Question Seven. How many relevant books to the area of study do we have under the subject; the use of ICT in the teaching and learning of music composition and production?

Answer: There are no hard copies. But the required textbooks are surfed from the internet.

Instructors Question Eight. How many CDs and DVDs related to the area of study under the subject, use of ICT in the teaching of music composition and production do you have?

Answer. There are six titles.

Instructors Question Nine. Specify the Titles

Answer. The titles are: i) Master Collection Adobe CC 2018, ii) Logic Pro, iii) Finale, iv) FL Studio, v) Finale Ed, vi) U lead studio.

Universities' libraries are the engines of academic excellence. It is not healthy for the university main library not to stock books for such an important subject like music composition and production. It is good to learn that the university main library has stocked CDs and DVDs relevant to music composition and production.

Figure 4.10: A mini library for the performing arts department.(on 27th April 2018)

4.3.2.3 Producing hand-outs connected to music composition and production

The task of producing hand-outs connected to music composition and production was assigned to the music instructor. He was to write a letter to the internet office or meet the concerned personnel, for access. The instructor said that there was one hand-out for music composition and production and that he managed to provide twenty (20) copies to students on sale.

Response from the Administrator and Instructors:

The researcher posed the following three questions to the administrator and instructors in the evaluation questioner:

Instructors Question Ten. How many handouts were produced to aid the teaching/learning of music composition and production?

Answer: One

Instructors Question Eleven. Specify the title of the handout produced.

Answer: The handout on Finale Notepad.

Instructors Question Twelve. How many students have so far got those handouts?

Answer: 20 students

On a closer analysis of the above responses, the researcher came to learn that the referred to produced handout mentioned above, is a Finale Notepad Tutorial guidelines notes. The tutorials were provided to students and are available but on sale.

It would be prudent to establish the other titles of hand-outs that are yet to be produced, and be published for the students to have a variety of reading materials. The researcher was able to learn of two students who had got a copy of the hand-out. But most of the students did not have the hand-out. The researcher got access to the cover page of the copy of the hand-out, **(See Appendix J).**

4.3.2.4 Internet connection

The Stakeholders at the future workshop assigned the researcher, the task of internet connection to the department of Performing Arts. She was to write a letter to estates

department and internet office, or meet the officer in charge, for the possibility of connecting internet to the department of Performing Arts.

The researcher met the University estates manager, who assigned the technician, Mr. Ojule the responsibility of connecting the internet to the department of performing Arts.   Mr. Ojule referred the researcher to the ICT office for specifications.   On getting the specifications, Mr. Ojule, went to Kampala City, to buy the necessary materials, like the iron bar for connecting the internet Wi-Fi.   He brought it, and came back to the researcher for guidance on the location where to fix the internet.

Figure 4.11Internet connections for Performing Arts department.(on 20th April 2018)

Getting the internet connected was a big break through. The university administration was very helpful and understanding. The researcher was referred to many offices following up on the university officials to authorize the internet connection.   The whole exercise of following up on the issue of getting the internet fixed took over two months. The great passion and ambition of the researcher kept her going to overcome the bureaucratic bottlenecks.

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We are very grateful for the university's positive response to the provision of the internet connection to the music department. Unfortunately, the internet signal is very poor. In so doing, the music students and staff members end up wasting a lot of time looking for internet in other places. Yet that time would have been saved for other constructive work.

On realizing that the university had provided the department of Performing Arts with an internet connection having a poor signal, the researcher made combined efforts together with the head of music department to approach the university ICT department to look for a solution from the people concerned. Unfortunately, such efforts have not yielded positive results!

As mentioned above, the department is still stuck with a very big challenge of poor internet connectivity. In a situation similar to the Performing Arts departments' experience, technical problems were found to be a major barrier for teachers to use ICT in schools; say (Rosemary Deney, Kenneth Ruthven and Sara Hennessy., 2003),

Such technical barriers included waiting for websites to open, failing to connect to the Internet, printers not printing, malfunctioning computers, and teachers having to work on old computers. "Technical barriers impeded the smooth delivery of the lesson or the natural flow of the classroom activity," Sicilia, (2005, p. 43)

The experience of the department of Performing Arts, is similar to that of the Ireland, where school principals and teachers identified the provision and maintenance of hardware in schools and the provision of professional development opportunities in ICT as being strategically important for the development of ICT in their school, (Science, 2008)

The researcher assumes that the University Performing Arts Department ought to have better qualities of the internet connectivity than the primary and secondary schools. Hence there is a need for the faculty of Arts and Social Sciences to plan well for its departments ICT requirements.

Failure to do so is to indicate a lack of the seriousness that the university is attaching to the risks associated with the use of the internet. Most schools (83% of primary schools, 87% of post-primary schools) in the developed countries like Ireland, were found to have an acceptable-use policy (AUP). This is a product of the requirements of the Schools Broadband Access Programme and the safety-awareness initiatives of the NCTE, (Science, 2008).

4.3.2.5 Creating more time on the timetable for music composition and production

The stakeholders in the future workshop assigned one of the lecturers the task of ensuring that the timetable is revised to accommodate music composition and production course unit on the music departmental time table. He was to do so together with the administration and management in the department of Performing Arts. By then out of the three programs of our sample population, none of them had computer music operations on the time table. The lecturer who was assigned to perform this task said that it was not possible to revise the timetable because that would mean reducing time from other lecturers to create time for music composition and production. He also said that it was hard since the semester had already started. According to researcher's observation, the timetable was revised and three hours were included on the timetable for B.Ed. II students. For the researcher to come up with this observation she analyzed all timetables for all programs in the department of Performing Arts from academic year 2015 to 2018/2019 academic year and she discovered that music composition and production was offered for the first time to undergraduate

programs. It was offered under the code and title "AMU 2201: "Computer operations and music production skills **"See time table below**

Table 6: Kyambogo University Timetable for Department of Performing Arts, Semester II 2017/2018

Bachelor's (B.Ed. & BTE) degree programs

DAY	8.00am9.00am	9.00am-10.00am	10.00am-11.00am	11.00am-12.00pm	12.00pm-1.00pm	1.00pm-2.00	2.00pm-3.00pm	3.00pm-4.00pm	4.00pm-5.00pm	5.00pm-6.00pm
MON	BTMU 124-**SKD** MU 1201-**SW**	BTMU 124-**SKD** MU1201-**SW**	AMU 1201-**KB** BTMU 124-**SKD**	AMU 1201-**KB** AMU 2202-**NS**	BTMU 221 –**KB** AMU 2202-**NS**	L	AMU 2201-**NB** AMU 1204-**JI**BTMU 223-**HSM**	AMU 2201-**NB** BTMU 221-**KB** AMU 1205 **HSM**	AMU 2201-**NB** BTMU 123-**JSN** AMU 1205-**DS** MU 1202 - **GK**	**GENERAL GROUP PRACTICE**
TUE	AMU 1202 **JSN**	BTMU 124-**SKD** AMU 2205 – **DS** BTMU 222 – **SW**	BTMU 123-**JI** BTMU 222 – **SW**	AMU 1204-**JI** RESEARCH **SW**	AMU 1204 - **JI** RESEARCH -**SW**	U	AMU 1203 – **NS** AMU 2203 - **JI**	DRAMA TUTORIALS-**KB**	DRAMA TUTORIALS-**KB**	**GENERAL GROUP PRACTICE**
WED	AMU 1203 - **NS**	AMU 1203 – **NS**	AMU 1206-	AMU 1206-**SKD**	AMU 1206-**SKD**	N	**CHORAL ALL**	**RECITAL & STUDI**	BTMU 222-**SKD**	**CHORAL**

	AMU 2202 –**JSN**	AMU 2205-**EMB**	**SKD**	AMU 2202 - **JSN**	AMU 2205-**EMB**		**STUDENTS-PEE**	**O ALL STUDENTS-NB**	AMU 2205-**DS** AMU 1202-**JSN**	**ALL STUDENTS-PEE**
T H U R	AMU 1202-**GK** PROJECTS - **EMB**	AMU 1202-**GK** AMU 2206-**EMB**	BTMU 123 –**JI**	BTMU 222 - **SW**	MU 1201 - **SW** PROJECTS-**EMB**	C	AMU 2203-**JI**	MU 1202-**GK** BTMU 123-**DS** AMU 2203-**KB**	MU 1202-**DS** BTMU 223 - **DS** AMU 2203 – **KB**	**GENERAL GROUP PRACTICE**
F R I	BTMU 122 **GK** AMU 2206-**EMB** BTMU 222 **SW**	BTMU 122 **GK** AMU 1205 - **HSM** AMU 2204 – **PEE** BTMU 222 **SW**	AMU 1205-**HSM** BTMU 124-**EMB**	**CHORAL ALL STUDENTS-PEE**	**RECITAL & STUDIO ALL STUDENTS-NB**	H	BTMU 122-**GK** AMU 1205 - **DS** AMU 2204 – **PEE** BTMU 223–**JSN**	BTMU 121-**HSM** BTMU 223 - **NB** AMU 2204 - **PEE** AMU 1205 – **DS**	BTMU 121**HSM** MU 1202 - **GK** AMU 2206-**EMB**	**GENERAL GROUP PRACTICE** MU 1202 - **GK**

KEY:

PEE – Dr. Peter Ekadu-Ereu,   HSM –   Ssennoga Majwala,   SKD – Solome Katasi Dungu,   EMB- Edith Mbedha Buyinza   JI – James Isabirye

NS -   DR. Nicholas Ssempijja   JSN –   Juliet Senyonjo Ntambi   DS – Daniel Ssempereza, GK. George Kitaka

SW – Stella Wadiru   KB   -   Keneth Bamuturaki   NB - Nicholas Busobozi

However; the researcher confirmed from the head of department and one of the lecturers that the B.Ed. time table had been revised three years ago to include this course unit only that it had not yet been offered to students.

The departmental timetable was revised to create time for music composition and production. Three hours were included on the timetable for music computer operations for B.Ed. students. The ICT music instructor stated that he combines the three programs under the sample population (BTE, B.Ed., and DES) during these three hours lesson.But according to the student's responses, the BTE students mentioned that they only got three periods of one hour each in the whole of the 2017/2018 second semester. They said that teaching was not continued to their class, and they were told that they are not supposed to be learning it.

Responses from the students Questioner evaluation tool(See 4.2.2 below on the findings from the Students questioner interview tool).

Students' Question One: How often do you learn music composition and production? The question purposed to establish the number of times the class was taught per week.
The largest percentage of students (40%) indicated that the ICT music class was taught twice a week this is evidence that learning took place.

Students Question Two: For how long do you have your lessons? The question purposed to establish the duration the class was held.
The majority of the students (30%) agreed that the class was held at least for two hours.
Students Question Three. How much time do you get to practice on your own in your own time? The purpose of the question was to establish if the students had ample time to practice, so as to acquire hands on experience in their area of vocation.

The individual students' practice time was not enough. The majority of the students (30%) reported that they did not get an opportunity to practice! The second highest percentage (20%) is that of the students who have an opportunity to practice for two hours. There was an acute lack of computers for students practice. One diploma student said that, "If facilities are available, we may have like two hours in two days of the week." Another respondent said that he could only manage to get two hours' time of practice on the weekend, especially on Sunday. I guess that is when there was little demand placed on the only two computers that is available to the students in the department. The highest percentage of the students who did not have an opportunity to practice indicated a need for the department of Performing Arts to urgently address the root causes of such an anomaly.

Apart from only one program for the B.Ed. students, other students who dint have the class on their timetable where taught combining all of the music students in the department. One of the respondents from the diploma program said that the class was held combining all students from all programs in the department, once a week for one hour. "…last semester, we had it once a week for the whole department."

One BTE student said, "We have never learned anything as concerns music composition and production, apart from the brief introduction on the finale software which was done in three different lectures of an hour each."

The other opportunity the music students got to be exposed to the ICT in music composition and production was during recital hour. The researcher observed that the recital hour combines all the music students in the Performing Arts departments (master, undergraduate and diploma programs). The instructor of ICT in music composition and production uses the first 10 to 30 minutes of the recital hour for demonstration of the use of Fruity Loops studio

software on a single computer. This is a very good innovation. However, other than the B.Ed. students, other undergraduate and diploma music students only got exposed to the ICT in music training during this fist 10 – 30 minutes of the recital. Given the time constraints, such a big number of students could not get an opportunity to practice on the computer for the required hands on experience.

In addition to lack of enough computers in the department, the researcher identified time constraints as one of the factors hindering proper use of the ICT among the students. There was limited time allocated in the two computer laboratories belonging to other departments.

Several recent studies indicate that many teachers have competence and confidence in using computers in the classroom, but they still make little use of technologies because they lack the time.

Similar to what the researcher has identified in Kyambogo University Performing Arts Department, Ghavifek, Kunjappan, Logeswary, Anthony, (n,d) say that a significant number of researchers have identified time limitations and the difficulty in scheduling enough computer time for classes as a barrier to teachers' use of ICT in their teaching. Among the scholars identified to testify to this fact are: Al-Alwani, 2005; Becta, 2004; Beggs, 2000; Schoepp, 2005; and Sicilia, 2005. The most common challenge reported by all the teachers was the lack of time they had to plan technology lessons, explore the different Internet sites, or look at various aspects of educational software.

4.3.2.6. Benefiting program

Responses from instructors

The researcher posed the following questions to the administrator and instructors in a questioner.

Instructors Question Fifteen: How many specific groups/programs have benefited in music composition and production lessons?

Answer: Three programs. These are: GAME, B.Ed., and BPA

Instructors Question Sixteen: To what extent have they benefited?

Answerer: The students can notate Staff, can produce audio, and can edit video.

4.3.2.7 Left out programs

Responses from instructors

Instructors Question Seventeen: How can we help those groups which have not benefited much from the composition and production course in case they are there?

Answer: Need to train them, and there is a need to revise the syllabus of the Diploma Syllabus, to include the ICT for music composition and production course.

One of the instructors said, 'Organize at least two hours, for each course, per week until the syllabi are reviewed.

4.3.2.8 Learning

Responses from the instructors

Instructors Question 18: What can we do to ensure that all programs benefit from the course?

Answer: Need to do the following:

- Review curriculum to incorporate the ICT music teaching and learning.

- Revise the diploma program syllabus.

4.3.3 Objective Three: Evaluate the use of ICT in the teaching/learning of music composition, and production

The researcher basically looked at individual students' projects as well as group projects. She was guided by her own observations, students' oral responses and also analyzed data from the 20 students' responses in the administered written analysis tool, **(See Appendix E)**. The data was recorded, tabulated and then put in percentages as indicated by bar graphs below.
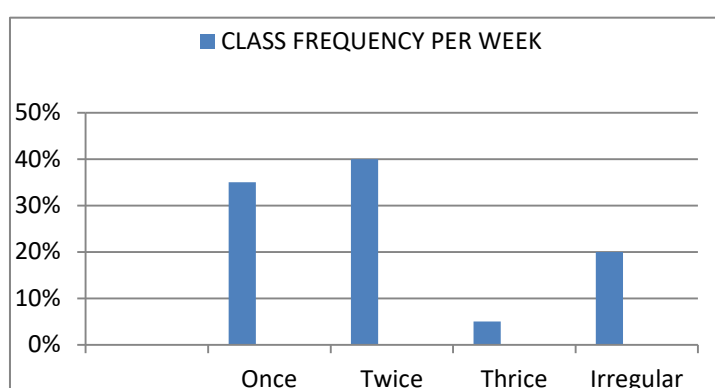
Figure 4.12: Class frequency per week

The largest percentage (40%) indicated that music composition and production class was taught twice a week. The second largest percentage (35%), mentioned that the class took

place once a week. The researcher learned that there were two classes. However, B.Ed. class timetable indicated a three hours period of music composition and production was held once a week. The instructor created more time for the lesson during the recital hour. Apart from B.Ed. students, the rest of the music students who didn't have that course unit on their timetable were taught in a group, combining all of the music students in the department during the recital hour. The B.Ed. class which takes place once a week, and the general class for all programs that learned ICT in music during the recital hour once a week.

One of the respondents from the diploma program said that the class was held combining all students from all programs in the department, once a week for one hour. "…last semester, we had it once a week."

One BTE student said, "We have never learned anything as concerns music composition and production, apart from the brief introduction on the finale software which was done in three different lectures of an hour each."
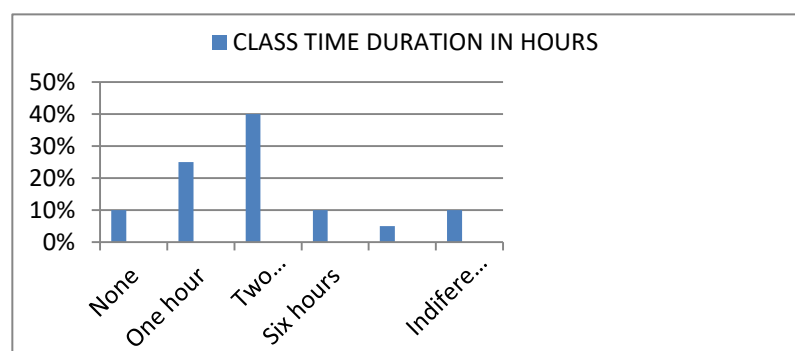
Figure 4.13: Class time duration per lesson

The majority of the students (40%) agreed that the class was conducted for two hours.The second largest percentage (25%) mentioned that the class was conducted for one hour. According to the timetable, the class was supposed to be conducted for three hours once a

week. But no student mentioned that the class was conducted for three hours. So learning mostly took place in two hours, at times one hour, but never lasted for three hours. It would be good for the class duration to be consistent.
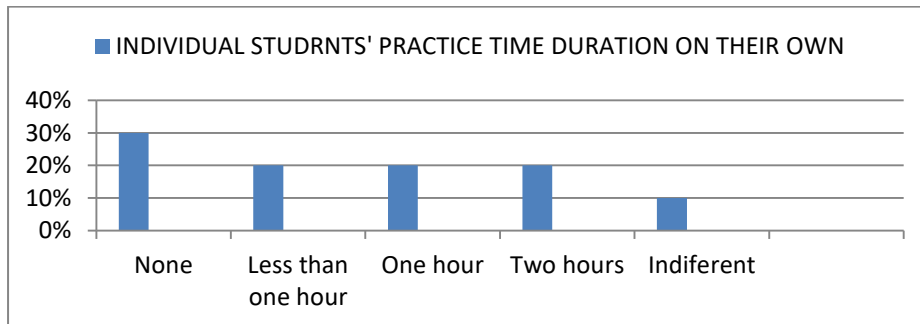
Figure 4.14: Individual students' time duration on their own

The majority of the students (30%) reported that they did not get an opportunity to practice! The second highest percentage (20%) is that of the students who have an opportunity to practice for two hours. There was an acute lack of computers for students practice. One diploma student said that, "If facilities are available, we may have like two hours in two days of the week." Another respondent said that he could only manage to get two hours' time of practice on the weekend, especially on Sunday. I guess that is when the little demand was placed on the only two computers that were available to the students in the department. The highest percentage of the students who did not have an opportunity to practice indicated a need for the department of Performing Arts to urgently address the root causes of such an anomaly.

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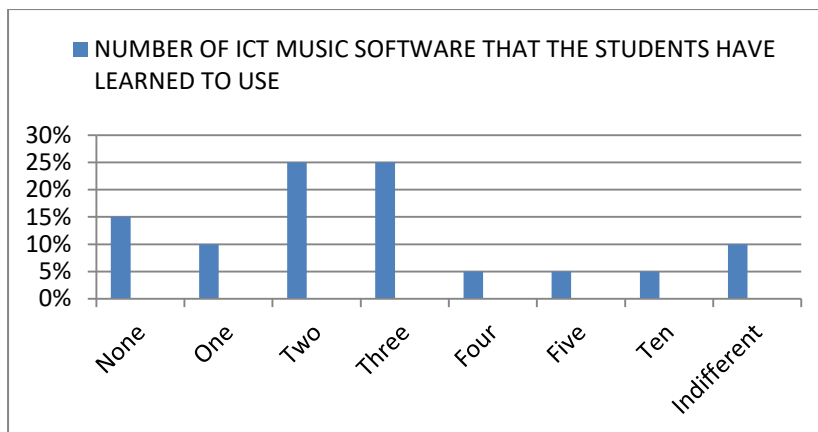
Figure 4.15: Number of ICT music software that the students have learned to use

Majority of the students (25%) - reported that they learned two types of software. Equally of the same number of students (25%) mentioned that they had learned three software. The second highest number of students (15%) did not mentioned even one type of software. The findings proved that the students had knowledge of the taught software. An extraordinary student was exposed to 10 types of software. The instructor could give delegate some responsibilities to him to mentor his fellow students – most especially, those who are still struggling.

4.3.3.1 Types of the software that the students were exposed to.

Students question five in the evaluation tool sought for the names of software they were exposed to, and these were grouped into five categories where;

Category one is made of 2 students who were exposed to only Finale Notepad which is 10% of the respondents. Category two is made up of 1 student which is 5% who was exposed to Fruity Loop Studio only. Category three is made up of 12 students which is 60% who were exposed to Finale Notepad and Fruity Loop Studio the basic types of software. Category

Four is made up of 3 students which are 15% of the respondents who were exposed to none of the types of software. And finally Category Five is made up of 2 students who make 10% of the respondents that did not benefit from the program. The different categories identified above are presented in Figure 4.16
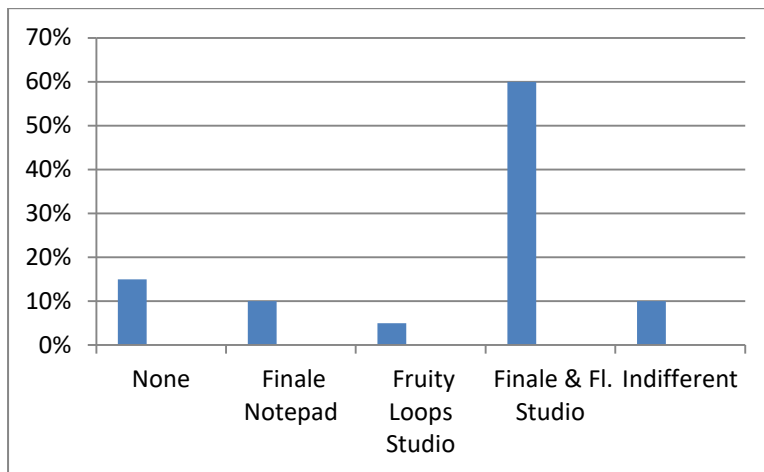
Figure 16: Names of the software students were exposed to

The biggest number of students (60%) was mostly exposed to the core two types of software, Finale Notepad and Fruity Loop Studio. This implies that there was success because the majority of the students acquired the required competencies in music composition and production which will help them in the world of work. The second biggest number of respondents 15% was exposed to none of the types of software and another number of 10% who were indifferent. This implies that these students did not learn and did not acquire the competence therefore; such students will not be competent in the field of work concerning music composition and production. The last two categories, the one of 10% and the one of 5% who were exposed to only one type of software each will not be confident in the field of work since they had limitations in exposure to other types of software.

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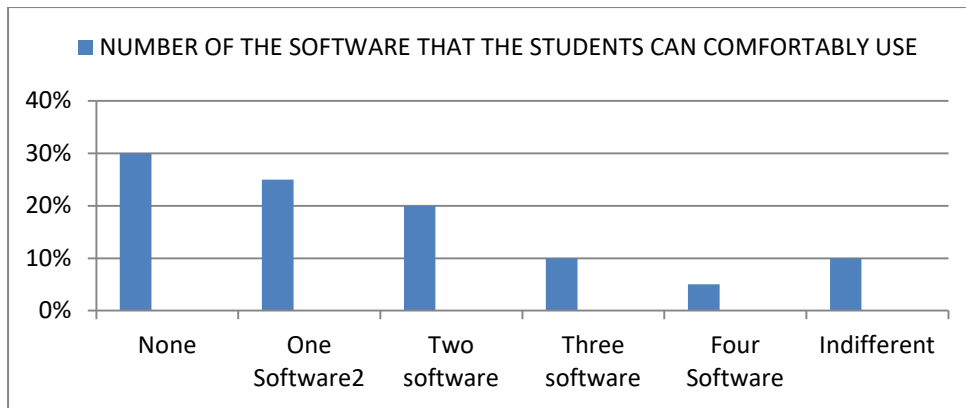
Figure 4.17: Number of software that the students can comfortably use

The biggest number of students (30%) has not mastered any software. A bigger number (25%) have mastered one type of software. Mostly either Finale notepad or Fruity loop Studio. The third largest percentage twenty (20%) have mastered two types of software. These are Finale and F. L. Studio
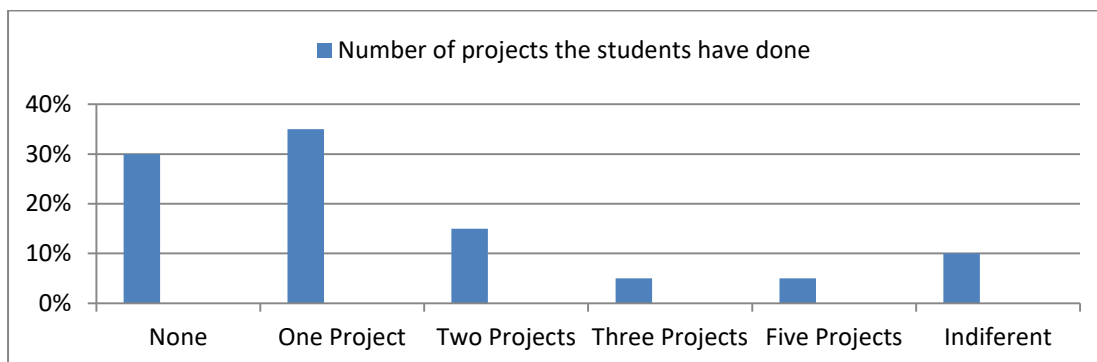
Figure 4.18: Number of class projects that the students have done

The biggest number of students (35%) has done one project! The second largest percentage (30%) did not do any project. A small number of the students (15%) have done two projects.
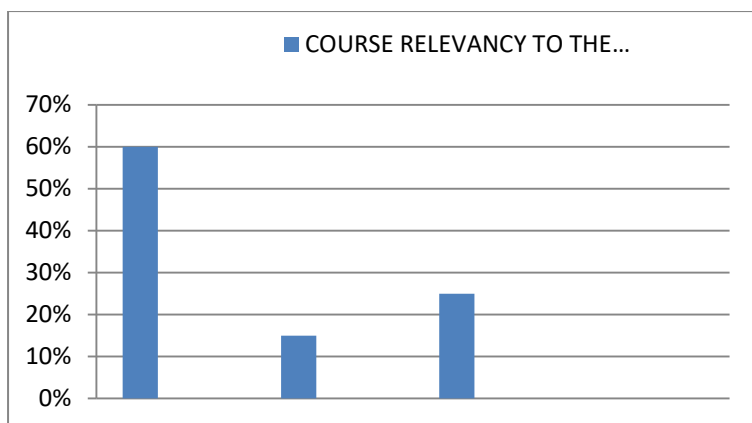
Figure 4.19: Course relevancy to the students

The biggest percentage (60%) overwhelmingly appreciated the course. One B.Ed. student said that, 'it is helpful although it has not yet helped me. The second biggest percentage (25%) did not find the course relevant. It was very interesting to learn that 15% of the students who had not get full exposure to the course, but still appreciated it and longed to have been part of the class. One diploma student said, "It would have been helpful if I could learn it fully."

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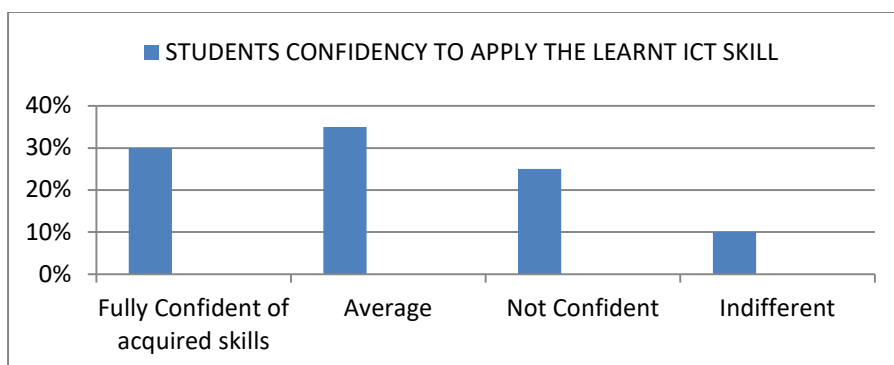
Figure 4.20: Students confidence gained to apply the learnt ICT music skills

The biggest number of students (35%) has an average confidence.   Those with full confidence were 30%.   Those who are not confident are 25%.   Below are some of the responses from the students on how they had benefited from the course:

- "It has helped me on festivals."

- "By learning how to compose some simple melodies and writing it."

- "It has helped me to understand the methods of how one can get to compose and make project."

- "I can notate music into a softcopy."

- "Put accompaniment for simple songs."

- "Transcription of music notes."

- "I have not yet benefited from it very much."
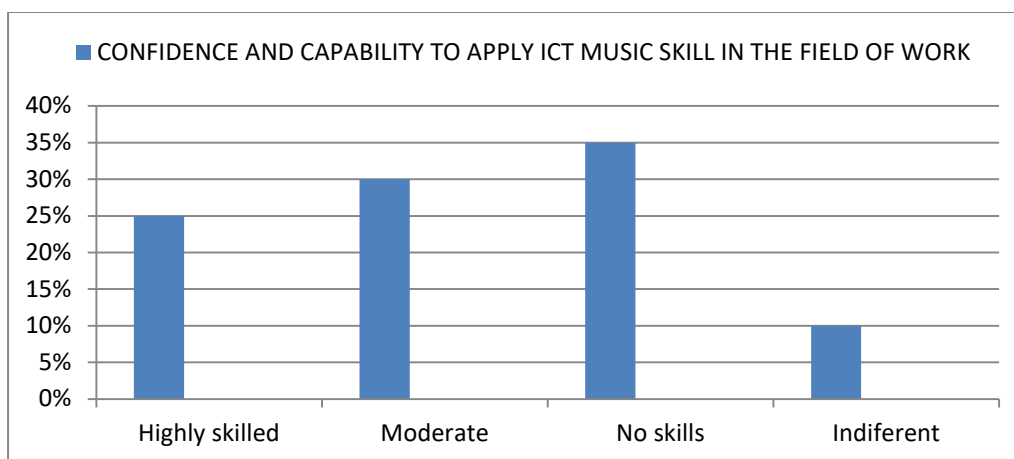
Figure 4.21: Students confidence to apply the ICT music skills in the field of work

The highest number of students (35%) has not yet mastered the skills.   The second highest number of students is moderate (30%).   A small number 25% of students are the students

who have fully mastered ICT music skills and are confident to apply the skill in the field of work.

The poor prospectus could be attributed to two major factors - lack of enough computers, and enough time for practice. One of the interviewee in response to the challenges mentioned that the training of ICT for music is a tough course. "They are not easy for the beginners and need a lot maximum attention and also there is limited time given to it."

In addition, the respondents from the BTE complained that they were taught for only three weeks in a one hour lecture once a week. They said that the instructor told them that they were not meant to study the course. The instructor did not even allow them to do the examination. Besides, even the B.Ed. students occupied the only two computers all the time, not allowing the B.Ed. students to practice even the little skills they had acquired. For this reason, the BTE students feel that they were not treated fairly and are appealing that the continuing BET students be treated fairly.

There were many responses on the challenges that were given by the twenty students interviewed and are grouped in the ten categories indicated above. They form the x axis on the bar graph.

- The mentioning of each challenge by a student is worth 5%.
- The weight of each challenge represented on the graph is determined by the frequency it is mentioned by each of the twenty students.
- The total percentage of each challenge if mentioned by all of the ten students would come to 100%.
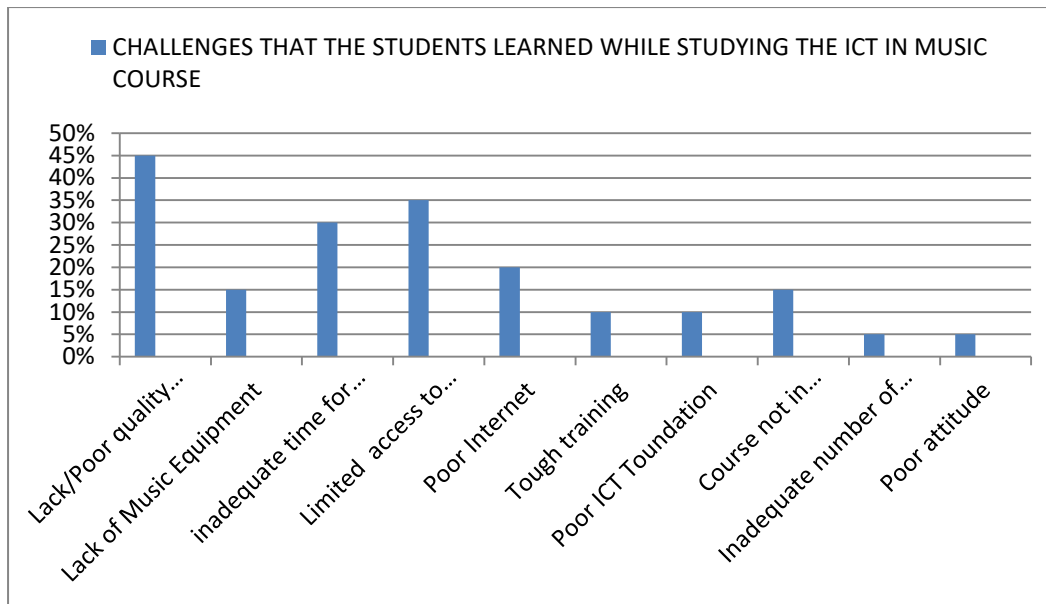
Figure 4.22: Challenges that the students faced while studying the ICT in music course

The biggest challenge (40%) that the students identified is lack of computers. One responded said that they had access to only one computer for practice. "Computers only one, even could break down." The second biggest challenge (35%) is that of limited access to computer laboratory and software. The other big challenge (30%) was inadequate time for practice. One of the students gave the following responses regarding the challenges they experience in studying the course. "There was lack of stable internet, and updated computer for the newer versions of software."

- There were many responses to the ten recommendations that were given by the twenty students who were interviewed. The recommendations are represented on the x axis on the bar graph.

- The mention of each recommendation is worth 5%.

- The weight of each recommendation represented on the graph is determined by the frequency it is mentioned by each of the twenty students.

- The total percentage of each recommendation if mentioned by all of the ten students would come to 100%.
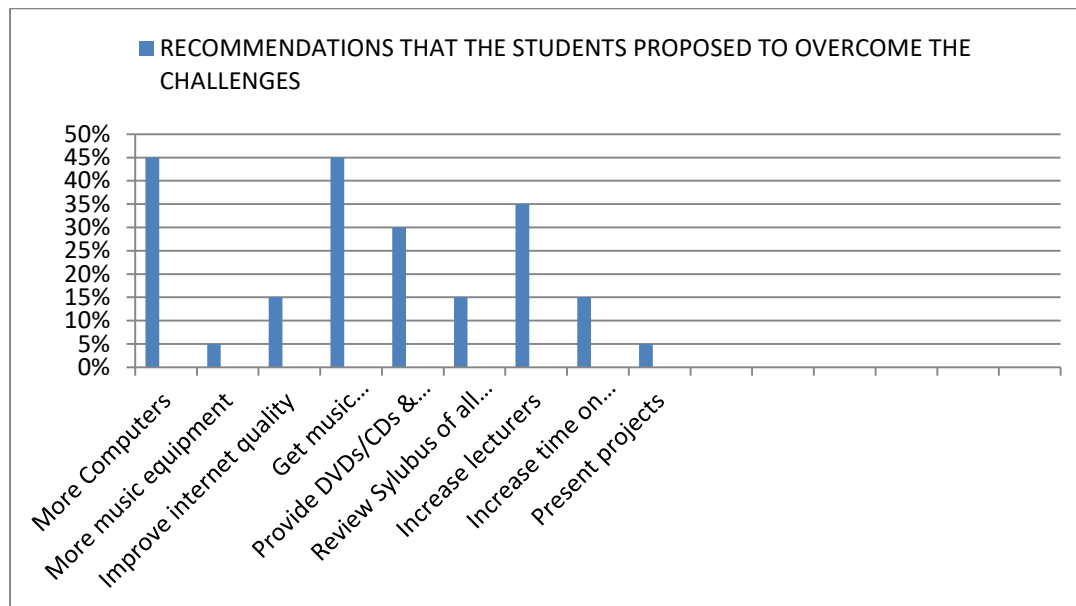
Figure 4.23: Recommendations that the students proposed to overcome the challenges

The highest priority in the prescribed recommendations that the students identified to solve the above challenges attained a (45%) was to increase computers. Equally important was (45%) the need to increase access to computer laboratories. The third priority (35%) is the need to increase the number of instructors more especially with specialisation in ICT for music.

One of the respondents from the diploma program gave the following recommendations.

"I suggest the institution provides enough support, in terms of facilities gadgets (computers) that are appropriate or can support the soft wares. I suggest that even the diploma program should be given an opportunity of learning music composition and production. And finally, the institution should avail a studio for the music department."

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Concluding remarks on the use of ICT's

In response to the relevancy of the course, the biggest percentage (60%) overwhelmingly appreciated the course. The biggest number of students who were fully confident regarding the acquired knowledge and skills abilities from the course was (30%). The students who had fully mastered ICT music knowledge and skills and were confident to apply them in the field of work were 25%, the moderate 30%, and no skills developed were 35%. .

The percentages above, from exposure to skill mastery could be attributed to two major factors - lack of enough computers, and lack of enough time for the individual students to do practice on the use of ICT in music composition and production. One of the interviewee in response to the challenges mentioned that the training of ICT for music is a tough course. "They are not easy for the beginners need a lot of maximum attention.

In addition, the respondents from the BTE complained that they were taught for only three weeks in a one hour lecture once a week. They said that the instructor told them that they were not meant to study the course; the instructor did not even allow them to do the examination. Besides, even the B.Ed. students occupied the only two computers all the time, not allowing the BTE students to practice even the little skills they had acquired. For this reason, the BTE students feel that they were not treated fairly and are appealing that the continuing BTE students be treated fairly.

The biggest challenge (45%) that the students identified was lack of computers. One responded said that they had access to only one computer for practice. The second biggest challenge (35%) was that of limited access to computer laboratory and software. The other big challenge (30%) was inadequate time for practice

The highest priority in the prescribed recommendations that the students identified to solve the above challenges was to increase computers, 45%. Equally important was the need to increase access to computer laboratories, 45%. The third priority was the need to increase the number of instructors more especially with specialisation in ICT for music, (35%).

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<center>**CHAPTER FIVE**</center>

<center>**CONCLUSION AND RECOMMENDATIONS**</center>

5.1. Introduction

This chapter includes conclusion and recommendations in relation to the study objectives.

5.2 Conclusions

The research was considerably successful as far as generation of knowledge regarding the issue of integrating ICT in the teaching and learning of music composition and production in the department is concerned. On the other hand it also made a significant contribution to the actual realisation of this integration in the department.

However, there is much to be improved upon in the department of Performing Arts, in order to optimise the results of integrating ICT in music composition and production in the department. Given the eagerness of the students from different programs for the course unit, the music ICT equipment that has been mobilised, and put in place by stakeholders are still inadequate. Secondly, for the same reasons above, apart from the B.Ed. students the timetable does not cater for the other students like BTE and Diploma (Secondary) students who are not only interested in the course unit, but it should be deemed necessary if the university is to produce competent graduates for the contemporary Music market place. Thirdly, the available time for the course unit is still inadequate.

It is very hard for the researcher to single out any one single person to whom the success of this study is attributed. Not even the researcher! For the idea and vision of using ICT in the teaching and learning of music composition and production at Kyambogo University did not

begin with the researcher. The master students were already learning the course. The B.Ed. syllabus had also been revised, awaiting implementation.

With due respect and humility, the researcher can only say that the study only scratched where it was itching! The findings of the study indicate that the vision and idea of utilizing ICT in the teaching and learning of music composition and production seems to have been a desired venture in the minds of many stakeholders. It is for this very reason that the stakeholders in the department whole heartedly brainstormed on the issue, as an attempt to get a remedy, and eventually came up with the major purpose of the study to be investigated – underutilization of ICT in the teaching and learning of music composition and production.

The stakeholders unanimously owned and supported the study. This is the number one factor that has greatly contributed to the success of the study. No doubt, the researcher can confidently ascertain that the future progress of the project, after the study, will to the great extent also be determined by the same principle of support through cooperation, unity and consensus of all stakeholders!

5.2.1 Objective one: To create availability of ICT equipment for music composition and production

Objective number one was achieved by creating space for computer laboratory and a music studio which was one of the basic steps required to bring ICT services nearer to the students learning environment. The establishment of the music studio fully furnished with computers and the music equipment would greatly help the students to have ample time to study as well as practice the ICT music software on their own so as to acquire more knowledge and skills to enhance their competence in music composition and production.

This objective was also achieved by procuring some music equipment, like a new Keyboard MIDI controller, Sound card, one Computer and Studio monitors which were delivered at the Performing Arts department. The space and the music studio equipment are helping the instructor to guide students on how to use ICT in music composition as well as students to acquire knowledge and skills of using ICT in music to enhance their competence. This will go a long way in boosting the teaching and learning of music to enhance competence in music composition and production.

Two types of music software were installed on the students' gargets to enable them access the software at any time of their convenience. This was purposely done to increase equipment for teaching and learning of music composition and production

5.2.2 Objective two: To guide students on the use of ICT in music composition and production

This objective was achieved by including 3 hours on a timetable for B.Ed. II students. Creating more time on the timetable for music composition and production helped the instructor to have more time to guide students on the use of ICT in music composition and production. For the researcher to come up with this observation she analyzed all timetables for all programs in the department of Performing Arts from academic year 2015 to 2018/2019 academic year and she discovered that music composition and production was offered for the first time to undergraduate programs. It was offered under the code and title "AMU 2201: "Computer operations and music production skills" However; the researcher confirmed from the head of department and one of the lecturers that the B.Ed. time table had been revised three years ago to include this course unit only that it had not yet been offered to students. Internet was connected for performing Arts department but the signal is very poor.

Availability of internet would do much to help students acquire knowledge and skills in music composition and production to enhance their competencies, if the university could consider it as a priority.

5.2.3 Objective Three: Evaluate the use of ICT in the teaching and learning of music composition and production

The biggest number of students (60%) was mostly exposed to the core two types of software, Finale Notepad and Fruity Loop Studio. This implies that there was success because the majority of the students acquired the required competencies in music composition and production which will help them in the world of work.

The instructor of ICT in music composition and production used the first 10 to 30 minutes of the recital hour for demonstration of the use of Fruity Loops studio software on a single computer. This is a very good innovation. However, other than the B.Ed. students, other undergraduate and diploma music students only got exposed to the ICT in music training during this first 10 – 30 minutes of the recital. Given the time constraints, such a big number of students could not get an opportunity to practice on the computer for the required hands on experience.

In addition to lack of enough computers in the department, the researcher identified time constraints as one of the factors hindering proper use of the ICT among the students. There was limited time allocated in the two computer laboratories belonging to other departments.

Several recent studies indicate that many teachers have competence and confidence in using computers in the classroom, but they still make little use of technologies because they lack the time.

Similar to what the researcher has identified in Kyambogo University Performing Arts department, (Simin Ghavifek, Thanusha kunjappan, Logeswary Ramasmy, Annreetha Anthony,) say that a significant number of researchers have identified time limitations and the difficulty in scheduling enough computer time for classes as a barrier to teachers' use of ICT in their teaching. Among the scholars identified to testify to this fact are: Al-Alwani, 2005; Becta, 2004; Beggs, 2000; Schoepp, 2005; and Sicilia, 2005. The most common challenge reported by all the teachers was the lack of time they had to plan technology lessons, explore the different Internet sites, or look at various aspects of educational software.

The performing arts department has eight programs. Out of the six only three programs GAME, B.Ed., and BPA are benefiting from the music composition and production course. So far these students can notate staff, produce audio, and edit video.

To ascertain students' level of acquiring knowledge and skills in music composition and production, the researcher basically looked at individual students' projects as well as group projects. She was guided by her own observations, students' oral responses and also analyzed data from the 20 students' responses in the administered written analysis tool.

According to the timetable, the class was supposed to be conducted for three hours once a week. But no student mentioned that the class was conducted for three hours. So learning mostly took place in two hours, at times one hour, but never lasted for three hours.

5.3 Recommendations

5.3.1 Objective one: To create availability of ICT equipment for music composition and production

i. The researcher recommends the department of Performing Arts to impress on the University administration to increase the number of computers in the department so as to attain to the recommended ratio of five students to one computer (5:1). If the future target of the department of Performing Arts is to have an enrolment of about 100 students, then the department ought to increasingly budget for more computers and raise the number from four to 20 or 30 computers in the next five years period.

i. The Department of Performing Arts ought to establish a world class computer laboratory/music studio. This will greatly improve the image of the department and the whole University. With an increased positive image, there is a potential for the department to grow to 500 students!

ii. When buying computers, the department should plan to procure computers with a big ram and high speed suitable for the heavy music software.

iii. The department should ascertain the missing music equipment to make a fully-fledged world class music computer laboratory

5.3.2   Objective two: To guide students on the use of ICT in music composition and production

1. The Department of Performing Arts ought to make use of every opportunity to harvest fruits of the ICT Revolution

Now that schools in Uganda, most especially the private Primary and Secondary schools are producing ICT literate students (digital natives), tertiary institutions like Kyambogo

University should not lag behind in the training of the Performing Arts Department students in the use of ICT in the music composition and production. For this reason, the researcher recommends that:

ii.   In short term planning, "Computer operations and music production skills "course should immediately be put on the DTE and Diploma (Secondary) students' timetable in the Department of Performing Arts.

iii.   In medium term planning, the Department of Performing Arts ought to review its curriculum and schedule the basic training of the "Computer operations and music production skills" on all of the program timetables.

iv.   In the long term planning, the Department of Performing Arts ought to expand the use of ICT in Music training into other certificate, diploma, Graduate and post graduate vocational courses.

v.   Kyambogo University policy makers ought to direct all the Teacher Training Colleges (TTC) in the country to begin teaching "Computer operations and music production skills"

vi.   Other Action research projects could be undertaken for the purposes of exploiting other available ICT vocational training opportunities in other global music schools.

vii.   As ICT is transforming all profession and vocations in the contemporary digital revolution the researcher recommends all tertiary institutions like -Kyambogo University, moving at same speed in adopting the use of ICT in the training of such respective professions and vocational disciplines.

viii.   The ICT revolution has of late, brought many revolutionary changes in the music industry. Music is now infused in all spheres of life. There is a very big potential for the ICT music education to promote the department of Performing Arts at Kyambogo University. The researcher recommends the university to aim at upgrading the Department of Performing

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Arts into one of the leading music schools in Uganda, East Africa, Africa and the whole world!

5.2.3 Objective Three: Evaluate the use of ICT in the teaching and learning of music composition and production

There are six music programs in the department giving a total of 83 three students. One lecturer cannot adequately teach all of the programs and give time to supervise the group and individual students project adequately. Therefore there is a need to have specialized music instructors in the music production and production. Hence a need to pay specific attention on both the quality of music instructors to be employed as well as putting in place staff development, refresher courses and peer mentoring. The research findings indicated the lack of diverse teaching methods in the teaching of the ICT course. This is understandable in the light of the lack of enough highly qualified music lecturers in the country. The researcher recommends the following:

iv.	Instruction should be done by more experienced lecturers as per the minimum requirements of the ministry of Education for the university to be employing PhD holders.

v.	Where such highly trained lecturers are lacking, the instructors should at least be required to poses a master's degree plus a satisfactory teaching experience.

vi.	There is a need and urgency to engage the Quality Assurance department to assess and advice on the status quo of the music ICT training standards.

i.	The University policy makers ought to urgently revise the music curriculum to take care of the fast changing vocational pedagogy in Music Learning and teaching and the related implications in the contemporary Digital revolution.

ii. The Department of Performing Arts ought to be introducing the ICT in music education during the first year of programs As the department, faculty and the university management plans to review the syllabi, all programs should be given a one hour period once a week. More especially the BTE, who are going to teach music in the Primary Teachers' Colleges,

Currently, there are only three programs (GAME), B.Ed., and BPA) benefiting from teaching of the ICT in music education in the department. The researcher recommends the following:.

iii. The Department of performing Arts ought bear in mind the need for the sustainability the new ICT course to be included on the university timetable..

iv. A need to ensure that good planning and implementation of the teaching of the ICT courses is extended to all programs.

v. There is a need for the department to involve the University Department of Quality Assurance for proper checks and balance measures to be considered in the implementation of the teaching of the ICT music courses.

1. There is a great need for the department of Performing Arts to have a secure and a balanced quick access of students to both hard and soft copies of books, CDs and DVDs. Hence, the university needs to buy more books CDs &DVDs in this area.

i. The researcher highly recommends that the department together with the Faculty boosts the library with appropriate books, CDs and DVDs for the department Performing Arts.

ii. To this effect, the researcher recommends to the Head of department to submit an updated list of contemporary books the university could stock in the library for the music programs.

iii. The researcher highly recommends the department of performing Arts to make a requisition of needed books, CDs, & DVDs for the next academic year.

iv. The Department of Quality Assurance should lend a hand into the issue of University Music Stocks.

i. All of the installed software should be taught and practiced by the students.

ii. Students should be given more time for practice so as to perfect the skills.

iii. Highly performing students could be added more responsibilities to mentor other slow learning students. This will greatly motivate the slow learning students, to explore to the best of their abilities the ICT music software.

iv. The instructor should take keen interest in the students not performing well so as to get solutions on how best to help them.

v. There is a need to equip the students with a more hands on experience training opportunities to the students.

i. The researcher recommends the university to identify a staff member from the ICT department well conversant with the music ICT software to be attached to the department of the performing Arts to assist both the music staff and the students.

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APPENDIXIES

APPENDIX A: Introductory letter

KYAMBOGO UNIVERSITY

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FACULTY OF VOCATIONAL STUDIES

DEPARTMENT OF ART & INDUSTRIAL DESIGN

MASTERS IN VOCATIONAL PEDAGOGY PROGRAMME

8th January, 2018

To Head of department Performing Arts - KYU

RE: INTRODUCTION OF KYOSABA BEATRICE

This comes to introduce to you KYOSABA Beatrice a student of Masters in Vocational Pedagogy (MVP) Programme at Kyambogo University. This student bears registration no. 16/U/14017/GMVP/PE and in her final year. As a requirement for graduation, this student expected to carry out Action Research through a collaborative process with World of Work

Any support rendered to her is highly appreciated.

Looking forward to your usual support.

Yours Sincerely,

Chris Serwaniko

Coordinator, Masters in Vocational Pedagogy Program

NORHED MVP Project

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Guide for Instructors

Introduction

I am Kyosaba Beatrice, a student at Kyambogo University pursuing a master's degree in Vocational Pedagogy. Currently I am carrying out a Situation analysis which will help me come out with a Research Topic. When I carried out Directed Vocational Studies, I realized that despite the existing Music Technology, Information Computer Technology (ICT) is still underutilized, the ability to create Music, compose, harmonize, using Digital Tools is not well developed while Music Education program still cannot produce individuals who can function productively in a highly competitive market economy. For that reason, I have come to discuss with you and find out where exactly the problem is.

Purpose of the study

Improving the use of I.C.T in the teaching /learning of Music.

Objectives

4.   Analyze the use of ICT in the teaching/learning of music.

5.   Explore the methods used to teach music using ICT.

6.   Examine the challenges faced in using ICT in the process of teaching/ learning of music.

7.   Get possible solutions to the identified challenges in question four above.

Questions

1.   When did you start using ICT in the process of teaching/learning of music in the department?

----

2.   What were you basically using it for?

----

3.   What special music programs/software do you use in the teaching/learning of music?

`

4.   When did you start using the computer for writing Music in the teaching/learning process?

----

5.   How is the students' experience in writing music, composing, harmonizing music using a computer?

----

6.   What do you expect your students to do in the area of music and ICT?

----

7.   Have your expectations been achieved?

----

8.   How best do you think you can achieve your expectations?

----

9.   What challenges do you encounter in the process of teaching/learning process of music as you use ICT? -- ----------------------

10.   What could be the cause of these challenges?

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11.   What solutions would you suggest to meet the challenges you've mentioned above?

----

12.   What methods do you use to teach music using ICT?

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13.   How do you rate the methods you use to teach music using ICT?

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14.   What could be the possible solution to improve the use of ICT in our department?

APPENDIX C: Interview guide for situation analysis

Guide for Students

1.   When did you start using ICT in the process of teaching/learning of music here in the department?

----

2.   What were you basically using it for?

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3.   What special music programs/software do you use in the teaching/learning of music?

----

4.   When did you start using the computer for writing Music in the teaching/learning process?

----

5.   How is your experience in writing music, composing, harmonizing music using a computer?

----

6.   What are your expectations in the area of music and ICT?

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7.   How best do you think you can achieve your expectations?

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8.   What challenges do you encounter in the process of teaching/learning process of music as you use ICT? ---

9.   What could be the cause of the challenges mentioned above?

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10.   What could be the possible solutions to improve the use of ICT in our department?

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APPENDIX D: Participants' responses on causes of underutilization of ICT in music composition and production

- Poor attitude of both staff and students towards the use of ICT in music.

- Low motivation of ICT personnel

- Delayed payment of ICT instructors in music

- Inadequate sensitization

- Lack of exposure to the use of ICT in music at lower levels

- Lack of appropriate infrastructure

- Late introduction of ICT in academic

- Inability integrate new ways (ICT) in the teaching/learning process in music

- Undermining the department by administration

- Misconception of production.

- Conservativeness

- Lack of knowledge regarding the use of ICT in composition and production.

- Shortage of professional teachers

- Much emphasis on theory than in practical.

- Low self-esteem in regard to use of ICT in music

- Competition

- Unreliable power.

- Little time allocated to ICT

- Lack of skills

- Poor background.

- Lack of money.

- Few ICT facilities.

- Inadequate institutional support towards the use of ICT in music.

- Poor government policy on the use of ICT in teaching/learning of music.

- Lack of interest.

- Inadequate teaching/learning resources e.g. music soft wares, internet.

- Illiteracy

- New course in the department.

- Lack of permanent professional ICT staff.

- Lack of enough space

- Limited capital for infrastructural development.

- Music curriculum is congested.

- Embarrassment

- General prioritization of other departments over the performing Arts.

APPENDIX E: Participants' responses for the believed to be effects of underutilization of ICT in music composition and production

- Our students will be limited to job market. A

- The graduates will have low self-esteem. A

- Our students will lose jobs. B

- The department will produce graduates without relevant competences and skills for the world of work. A

- Our students will be able to continue smoothly. A

- Music department will get a bad reputation. C

- The department will produce job seekers and non-job makers. A

- Our graduates will get titles without skills. A

- Poor quality products A

- The department will produce unmarketable products (students). A

- There will always be lack of skilled personnel. A

- There will be reduced enrolment in the music department. C

- There will be monopolization of composition and production of music in the music department D

Causes of underutilization of ICT in music were synthesized as follow:-

- General prioritization of other departments over the performing Arts. A

- Limited capital for infrastructural development. A

- Negative attitude of both staff and students towards the use of ICT in the teaching/learning of music. B

- Delayed payment of ICT staff. C

- Inadequate sensitization of new students towards the use of ICT in the teaching /learning of music. D

At this stage, we decided to leave the effects in the critical phase hopping that once we get objectives from the causes, and get solutions to the causes, we will have addressed these effects.

Utopian phase

Participants carried the clustered causes into the ''**fantasy phase**'' and categorized them in five (5) different categories.ie some of them were **administrational**, others were **departmental**, **attitudinal,** others were based on **curriculum** and others were **government** issues.

The causes were further classified as **short term** and **long term.**

For some of the causes, we were to make investigations from the head of department performing arts i.e. there is general prioritization of other departments over the performing Arts. There is inadequate institutional support towards the use of ICT in music. Concerning the availability of resource books for reference, we were to consult library people. For internet connection, we were advised to make a follow up for internet connection to the music department.

Participants, under the guidance of the researcher /facilitator turned around ''**critique**'' points into their positives. This is what they came up with.

- There should be adequate capital for infrastructural development.

- Adequate resource books for reference.

- There should be permanent professional ICT staff.

- There should be adequate institutional support towards the use of ICT in the teaching/learning of music.

- More computers should be added in the department and internet to be connected to the music department.

- There should be adequate teaching/learning resources: i.e. composition and production software programs.

- There should be timely payment of ICT instructors.

- ICT should be allocated more time on the timetable.

- Both staff and students should have a positive attitude towards the use of ICT in teaching/learning of music.

- Instructors should have an ability to integrate new ways ICT in the teaching/learning of music.

- Learners should be exposed to the use of ICT in music at lower levels.

- Instructors should put more emphasis on practical than on theory.

- There should be proper government policy on the use of ICT in the teaching/learning of music.

Stake holders carried out a common analysis of the ideas or solutions and these solutions were put in their categories to help participants identify who is responsible for what.

Category number 1: Departmental and short term.

- Department should allocate adequate time for ICT on the timetable.

- Department should put more emphasis on practical than theories in music composition and production.

Category number 2: Attitude.

- Both staff and students should have a positive attitude towards the use of ICT in teaching/learning of music composition and production. **Short term**

- Instructors should have an ability to integrate new ways (ICT) in the teaching/learning process**. Long term**

Category number 3: Curriculum.

- Students should be exposed to the use of ICT in music at lower levels. **Long term**.

Category number 4: Government.

- Government should put proper policy on the use of ICT in the teaching/learning in the teaching learning of music. **Long term**

Reality/implementation phase

Measurable and short term ideas were extracted and written down to constitute an idea store on a flip over chart.

Short term ideas

- There should be adequate capital for infrastructural development.

- Adequate resource books for reference.

- There should be adequate institutional support towards the use of ICT in the teaching/learning of music.

- There should be adequate teaching/learning resources. I.e. composition and production software programs.

- ICT should be allocated more time on the timetable.

- There should be internet

Participants suggested that the following should be done.

- Contacting appropriate authority to secure space in the new block for teacher education.

- Improving on the new computer room by removing some items and transferring them to another room.

- Consulting library for the computer resource and reference books.

- Producing handouts connected to music composition and production

- More computers to be installed in the music computer lab.

- Internet to be connected to the Performing Arts department.

- Students to be encouraged to use their own computers in the programs.

- Installing relevant software for music composition and production both on the departmental computers the ones for students.

- Revision of the departmental timetable to create more time for ICT practical.

- Performing Arts department to be connected to internet.

An action research work plan was made. It indicated who does what, where, when, and how to implement the best ideas. This table 3 is showing responsibilities given to different stake holders during future workshop

APPENDIX F: Action research evaluation tool of the administrator and instructors

1.   How many music programs do have computer music operation course in their syllabus?

…………………………………………………………………………………………
…

1.   Which are those?

…………………………………………………………………………………………
…

2.   How can we help those students in the programs which do not have ICT related courses to acquire the ICT skills and competence?

…………………………………………………………………………………………
…

3.   How many computers has the university promised to give to the music department?

…………………………………………………………………………………………
…

4.   When are we expecting them?

…………………………………………………………………………………………
……

5.   When are we expecting the music studio sound card and studio monitors to arrive at the department?

…………………………………………………………………………………………
……

6.   How many relevant books to the area of study do we have under the subject; the use of ICT in the teaching and learning of music composition and production?

…………………………………………………………………………………………
…

7.   How many CDs and DVDs related to the area of study under the subject, use of ICT in the teaching of music composition and production?

…………………………………………………………………………………………
……

`

8.   Specify the Titles

……………………………………………………………………………………………
…

9.   How many handouts were produced to aid the teaching/learning of music composition and production?

……………………………………………………………………………………………
…

10.   Specify the tile of the handout produced.

…………………………………………………………………………………………

11.   How many students have so far got those handouts?

……………………………………………………………………………………………
……

12.   What can students do with the software they have been using?

…………………………………………………………………………

13.   How many software can they comfortable interact with?

……………………………………………………………………………………………
……

14.   How many specific groups/programs have benefited in music composition and production lessons?

……………………………………………………………………………………………
……

15.   To what extent have they benefited?

……………………………………………………………………………………………
……

16.   How can we help those groups which have not benefited much from the composition and production course in case they are there?

……………………………………………………………………………………………
What can we do to ensure that all programs benefit from the course?

`

APPENDIX G: Action research evaluation tool for students

Name: …………………………………………. Program …………………………….…..

1.   How often do you learn music composition and production?

……………………………………………………………………………………………

2.   For how long do you have your lessons?

…………………………………………………………………………………………

3.   How much time do you get to practice on your own in your own time?

…………………………………………………………………………………………

4.   How many music software do you use?

……………………………………………………………………………………………

5.   What are they?

……………………………………………………………………………………………

6.   How many of the software can you operate comfortably, and which ones are they

……………………………………………………………………………………………

7.   How many projects have you made so far using this music software so far? Which ones are they

…………………………………………………………………………………………..

8.   Has the music composition and production course been helpful to you?

…………………………………………………………………………………………..

9.   How have you benefitted from it?

……………………………………………………………………………………………

10.   How can the skills you have acquired from this music composition and production course help you out in the field of work?

……………………………………………………………………………………………

11.   What challenges have you encountered in the process of teaching/learning of music composition and production?

……………………………………………………………………………………………

12.   What suggestion/advice would you give administration in order to improve the standard of music composition

APPENDIX H: Letter to the university secretary requesting for music equipment

Performing Arts Department

Kyambogo University

11th April; 2018

To University secretary,

Kyambogo University

Thru;

Dean Faculty of Arts and Social Sciences

Kyambogo University

Thru;

Head of department, Performing Arts

Kyambogo University

Dear Sir/Madam

RE: REQUEST FOR MUSIC STUDIO EQUIPMENT

I am Kyosaba Beatrice, a Researcher attached to Performing Arts department of Kyambogo University.

The situation analysis which was conducted by the researcher in consultation with the Performing Arts department identified that, the underutilization of the ICT technology in the teaching and learning of music as one of the greatest challenges facing the department at Kyambogo University. The same concern was confirmed in the Future Workshop.

If this challenge is not addressed, it is likely to adversely hinder the effective acquisition of competencies in the teaching of music at Kyambogo. Hence, there is an urgency of getting a remedy. It is in so doing, that we can be proud of a Performing Arts department capable of producing highly skilled graduates with qualities to satisfy the contemporary market demand of music composition and production in a highly competitive market economy.

The study has achieved some preliminary findings, like securing a room for the music studio; music software has been installed on 24 computers to be used by the music students; and the music department is now connected to internet.

For the reasons mentioned above, I do humbly request you to provide us the following music studio equipment:

Equipment -- Price

MIDI controller---1.800, 00 0 sh.

USB MIDI cable--- 95,000 sh.

Sound card --- 2.500, 000 sh.

Condenser Microphone-- 500,000 sh.

Microphone stand--- 90,000 sh.

Headphones-- 80,000 sh.

Printer cable--- 30,000 sh.

Table -- 200,000 sh.

Computer--- 3.000, 000 sh.

Sound proof equipment and labor-- 2.500, 000 sh.

2 Studio monitors--- 600,000 sh.

2 Studio monitor's stands---200,000 sh.

Total   --- 11,595,000 sh.

We do strongly feel that there ought to be a paradigm shift in the digital music pedagogy, if we are to adequately respond to the technical education and vocation training needs of the 21st Century. Should we not prioritize the digital upgrading of teaching music at Kyambogo

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University, the Performing Arts department, might soon apparently become obsolete, outdated and eventually become extinct among the potential students (our esteemed customers in society!) We shall be very grateful if our request is granted.

Yours faithfully

KYOSABA BEATRICE 16/U/GMVP/PE

RESEARCHER

APPENDIX I: Observation checklist for the use of ict in music composition and

production

1.	Number of music programs with music composition and production in their syllabus.	3
2.	Name of programs with ICT related courses	GAME, BPA, B.Ed.
3.	Number of books relevant for music composition and production.	2. modern recording technology and logic pro x
4.	Number of music software installed	3. Fruity Loop Studio, Finale Notepad and Asio. But only 2 were being utilized.
5.	Number of handouts produced to aid the teaching of music composition and production.	The researcher saw only the cover page of the handout.
6.	Title of the handout produced.	It was about Finale Notepad software.
7.	Number of students who got the handouts for music composition and production	None.
8.	How the students can use the music software.	Transcribing, composing and producing.
9.	Number of beneficiaries.	1Group. B.Ed.
10.	Frequency of lessons	Once a week
11.	Duration of lessons of composition and production	3hours
12.	Time for practice of music composition	15% had time for practice. The rest had no access to computers after classes.
13.	Number of software used for composition and production	2 two.
14.	Number of projects done.	Those who were taught did 1 project each and these were projects of Finale Notepad. Project of Fruity loop Studio was not done.
15.	When are we expecting the studio equipment sound card and studio monitors to arrive at the department?	The supplier told the head of performing arts department, the researcher and instructor of music composition that, he is going to deliver the Studio Monitor and the sound card very soon.

APPENDIX J: Stakeholders invitation letter for follow-up meeting

Kyambogo University
P.O. Box 2 Kyambogo
20/08 /2018
Performing Arts department,
0774529626

To --

Dear Sir

RE: ACTION RESEARCH WORK PLAN FOR MUSIC DEPARTMENT EVALUATION MEETING

In the light of the above mentioned subject, we would like to appreciate your efforts and co-operation towards the achievement of the Action research objectives. The purpose of this letter is to follow up on the implementation of our assigned tasks. Attached is a table of the assigned tasks to each individual. We will appreciate if you could send us your feedback by at least 5:00pm on Wednesday 22. 2018. Your positive response will be highly appreciated. Thanks.

Yours faithfully

KYOSABA BEATRICE

Researcher