

Project Report
on
INSTRUMENTO
An E-Learning Platform For Music Instruments
Submitted in partial fulfilment of the requirements for the award of degree of

BACHELOR OF
ENGINEERING IN
COMPUTER SCIENCE & ENGINEERING



Under The Supervision of
Dr. Shobha Tyagi

Associate Professor

Submitted By:

DEEPAK SINGH

18SCSE1010297

18021011533

HARSHITA BHARTI

18SCSE1010653

18021011877

SCHOOL OF COMPUTING SCIENCE & ENGINEERING
Galgotias University, Greater Noida
December 2021



**SCHOOL OF COMPUTING SCIENCE AND ENGINEERING
GALGOTIAS UNIVERSITY, GREATER NOIDA**

CANDIDATE'S DECLARATION

I/We hereby certify that the work which is being presented in the project, entitled “ **INSTRUMENTO An E-Learning Platform For Music Instruments** ” in partial fulfillment of the requirements for the award of the BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING submitted in the **School of Computing Science and Engineering** of Galgotias University, Greater Noida, is an original work carried out during the period of **JULY-2021 to DECEMBER-2021**, under the supervision of **Mr.V. ARUL, Assistant Professor, Department of Computer Science and Engineering of School of Computing Science and Engineering** , Galgotias University, Greater Noida

The matter presented in the project has not been submitted by me/us for the award of any other degree of this or any other places.

18SCSE1010653 - HARSHITA BHARTI

18SCSE1010297 - DEEPAK SINGH

This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

Supervisor

(Mr.V.Arul, Assistant Professor)

Acknowledgement

I am highly grateful to Dr. Shobha Tyagi, teacher of the School of Computer Science and Engineering for giving me her advice and facilities for the successful completion of my project. It gives me great pleasure to express my deep sense of gratitude and indebtedness to my guide Dr. Shobha Tyagi, Associate Professor, School of Computer Science and Engineering for her proper guidance, valuable support and encouragement throughout the project. I am highly obliged to her for providing me with this opportunity to carry out my ideas and work during my project period and helping me to gain the successful completion of my Project. My special thanks are going to all of the faculties and staff of the School of Computer Science and Engineering, Galgotias University, for encouraging me constantly to work hard in this project. I pay my respect and love to my parents and all other family members and friends for their help and encouragement throughout this course of project work.

Harshita Bharti

(18SCSE1010653)

Deepak Singh

(18SCSE1010297)

CERTIFICATE

The Final Thesis/Project/ Dissertation Viva-Voce examination of **18SCSE1010653** -

HARSHITA BHARTI, 18SCSE1010297 - DEEPAK SINGH has been held on

_____ and his/her work is recommended for the award of **BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING.**

Signature of Examiner(s)

Signature of Supervisor(s)

Signature of Project Coordinator

Signature of Dean

Date:

Place:

ABSTRACT

We're living in the work from home or remote work era and all are home bound where everyone wants to learn new things whether it's their lost passion or their curiosity to learn new things so this platform is based on python, django and some other powerful technologies that will be helpful in learning different music instruments at their own comfortable place. This platform will consist of various tutorials of instruments like guitar, piano etc with some unique features which will let the user learn faster in an interesting way. This platform will be powered by some great instrumentalists who will encourage the user to learn and excel in it. In addition, the adoption of e-Learning outcomes to reduce environmental impact, with minimal use of mobility and paper use to facilitate teaching resources and assignments. It is important to note the fact that the emphasis is now on the process rather than on the content of education. This transformation of education has taken place as a result of the explosion of information, as well as the rapid development of technology. In this regard, e-Learning is important in the field of education.

Keywords – E-Learning , python web application , django , react.js.

Table of Contents

Title	Page No.
Candidates Declaration	2
Acknowledgement	3
Certificate	4
Abstract	5
Introduction	7
Literature Review	8-51
Technologies	51-52
Opportunities	53
Challenges	54
Result	56
Conclusion	57
Reference	58

INTRODUCTION

Music education includes music training and education. It contains the teaching and practice of music, and how these two elements come together to develop a musical habit as a discipline. E courses are usually designed to guide students with information or to help them with specific tasks. Two different types of e-content are identified, namely information-based and performance-based content. The first conveys information to the learner, and the last involves the development of a process skill where the student is expected to increase his or her ability. Both of these types of content apply to music education. Music theory is based on knowledge, and includes things like music history, ethnomusicology, psychology and music sociology, among many others. The use of e-Learning for information-based content will greatly enhance teaching in the area, and provide a platform for students to interact more with their peers and educators. The active aspect of music forms an integral part of discipline, for music is actually the art of making. The use of e-Learning in this aspect of music is why it is so important. Advances in internet technology and multimedia technology are the two main advantages of e-Learning. Various technologies, constantly evolving, have been developed to facilitate e-Learning. E-learning creates a variety of opportunities that can integrate computer-based techniques with classroom environments and delivery methods that can deliver teaching and learning services outside the campus walls. With regard to music education, the opportunities available for a variety of delivery methods include integrated learning, distance / open learning, visual learning and collaborative music activities.

LITERATURE REVIEW

E- Learning as a Strategy for Enhancing Access to Music Education

by Dr. Beatrice A. Digolo (Corresponding Author), Miss Elizabeth A. Andang'o, Mr John Katuli

Within Kenya, as in many other countries, access to music education is limited, with a large number of students aspiring to further their education without a program. Many music service providers find it difficult to extend their studies outside the campus walls due to the inability to distribute available resources for use outside the campus. However, it is becoming increasingly clear that there is a need for more music training for more interested people who do not have the opportunity to study this field at university level. Distance learning and open learning have both come to mind as solutions to this challenge. The above situation forces service providers to explore opportunities to conduct online music education as a way to reach more people. This paper argues that e-Learning provides an effective solution to access problems.

Evaluating a music e-learning resource: The participants' perspective

by Frederick Seddona & Michele Biasuttib

This pilot research study examined the functionality of an e-learning music app specifically designed to enable each student to play 12 blues enhanced by the ear, on the keyboard, in the e-learning area. The study also sought participants' views on the unit by stimulating their thinking on literacy. Participants' views on the role of the on-line lecturer in the e-learning environment were also explored. The study used a standardized approach with video recording of participants as they engaged with the source. The details of the led video were

analyzed using the analytics process. Reorganized interviews were conducted with individual participants after the completion of study sessions.

ePiano, a case of music education via internet in rural Zambia

by Kristin Shoemaker & Gertjan van Stam

The objectives of this study were: 1) to evaluate the effectiveness of piano lessons used between two different geographical areas, (2) to provide ideas on the benefits and challenges of harmonious and consistent learning about piano learning, and are used in combination.

Music and Arts E-Learning Graz

by Manfred Rechberger

Computer-based resources and computer-based applications are becoming increasingly important because of the emergence of new media opportunities in music. In contrast to conventional learning platforms, the learning platform at the university of art is first and foremost dependent on the use of visual media. Many modules containing multimedia-based content that promote creative processes and learning environments. The benefits of e-learning include flexibility and ease for students, especially if they have a wide variety of learning experiences using multimedia apps. This paper is about the use of forums, blogs, wikis and online collaborative activities and presents music creation tools based on real-life chat conversations on news pedagogies. The final analysis represents a special learning situation about making a musical instrument and commenting on a video.

Reflections On Music Therapy Training Within E-learning Education Contexts

by Imogen Nicola Clark & Grace Anne Thompson

The rapid growth of e-learning technology is transforming the availability and delivery of university education. In Australia, e-learning offers students the opportunity to study music therapy while living in remote areas of a large country. Students enrolled in a Masters of Music Therapy at the University of Melbourne can choose traditional study on campus or integrated learning, which includes a combination of face-to-face and e-learning. This article focuses on integrated learning by music medicine students and teachers at the University of Melbourne. A description of the music treatment program is provided with a detailed description of one subject to show how e-learning is managed. Our experience of teaching integrated students is discussed, and we identify key challenges including teacher-student relationships, regular communication, student-to-student engagement, and easy-to-use online learning tools. We then consider students' responses from informal assessment, and describe what happens to students through collaborative learning, communication with teaching staff, and staying on track through learning. In conclusion, we discuss the future of music therapy education in an online forum, look at the challenges and benefits of students, educate academics and academic institutions, and provide ideas for future research projects.

Music teaching platform based on FPGA and neural network

By Xiaolu Wang ,YaoChen

This model describes a new way for students majoring in music training to teach specific topics in advanced music system. Projects are typically designed to address the lack of enthusiasm and participation, so that the end of course students have extraordinary interest to learn music. The music teaching of the student with help of neural network and FPGA, after that the learning is completed to conduct the examination process about the music course to validate the student. A minimal effort

range analyzer works from a modified FPGA (Field Programmable Gate Array) board. The neural network is used to create the platform of music student and to reduce the risk of data management in the class room. The processing of the network depends on the weight of the connections between those nodes that have been trained or adapted to the training dataset, and this process is commonly referred to as network training or learning. Not only are the students improving performance, therefore in this system compared to the significance of the existing model educated in this music course. A few understudies have likewise demonstrated compassion towards traditional music that they had never heard.

Effectiveness of an e-Learning Curriculum on Occupational Health for Music

Performers

By Yu-Huei Su, Yaw-Jen Lin, Hsin-Yi (Jean) Tang, Mei-Ju Su, and Heng-Shuen Chen

The purpose of this study was to evaluate the effectiveness of the e-learning curriculum and to explore the type of questions raised by students through the “Health Promotion for Music Performers” (HPMP) e-learning curriculum. Materials and Methods: This study was primarily a pedagogical research composed of a pre- and postintervention design coupled with a 1-month longitudinal knowledge retention measurement. The intervention, the HPMP e-learning curriculum, was implemented over 14 weeks, once a week, for a total of 14 classes. Each class consisted of a 60-min prerecorded lecture followed by a 40-min real-time interactive discussion. The interdisciplinary faculty panel consisted of experts from the field of music and medicine. The Self-Assessment Questionnaire (SAQ) was used to evaluate knowledge

changes concerning Practice and Performance issues and Health and Life Style issues. Results: Fifteen graduate-level music students participated in the study. The SAQ scores on the 1-month follow-up test for Practice and Performance issues were significantly higher than the pretest ($t=2.731$, $p<0.05$). On the other hand, no significant differences were found between the posttest and pretest or between the follow-up test and posttest. Regarding Health and Life Style issues, comparison at all three measurement points did not reveal any significant difference. Questions raised by students fell into four major categories: performance injury (45%), performance anxiety (22%), general physiology (22%), and general psychology (11%). Conclusions: The findings suggest that the HPMP e-learning course enhanced student awareness of Practice and Performance issues but did not have as significant an impact on student awareness of Health and Lifestyle issues.

VEMUS: An Integrated Platform to Support Music Tuition Tasks

By George Tambouratzis; Kostas Perifanos; Iro Voulgari; Anders Askenfelt; Svante Granqvist; Kjetil Falkenberg Hansen; Yann Orlarey

In this paper, the VEMUS platform is presented, as a novel approach for music tuition that focuses on beginner and intermediate students, typically aged from 9 to 15 years. This platform is characterized by an open, highly interactive and networked multilingual music tuition framework that covers a selection of popular wind instruments. The VEMUS environment integrates innovative, pedagogically-motivated e-learning components to augment traditional music teaching in three distinct learning settings, namely self-practicing, classroom and distance learning. In the present article, the current stage of development of VEMUS is presented, and the areas where it

might be of most use towards supporting the educational activities associated with music tuition are identified.

Designing Music Games and Mobile Apps for Early Music Learning

by Szu-Ming ChungChun-Tsai Wu

For the purpose of developing music game apps for early music learning, the authors establish a research of game design, testing, and validation. Before explaining each stage of this research, the past and current music games for learning and entertainment are investigated. This chapter also explores theories and teaching approaches that need to be addressed if mobile applications are to be developed, created, and evaluated. The agile software development method is implemented to assist a successful development of game design on Android system with a multi-touch screen. In order to find problems and possible solutions of designing e-learning games, in the course of testing, the authors collect data based on empirical observations and gameplay records on the tablets. For often unattainable assessment in music education, a combination of the System Usability Scale (SUS) and Questionnaire for User Interactions Satisfaction (QUIS) is recommended to validate a music game system and mobile applications.

E-Learning Perspectives: Rethinking the Purpose of Music Analysis in K-12

Music Programs

By Nikita Mamedov

Instructors at all levels face the need to adapt to the increased demand in e-learning. There are different pedagogical challenges to overcome when dealing with performative and academic music fields' teaching practices. Previous works on the use

of e-learning and blended education emphasize the necessity to incorporate digital literacy into the music classroom (Ruokonen et al., 2019.) This research focuses on understanding music theory as an interdisciplinary study rather than purely analytical, and offers an insight into a revised version of Bloom's taxonomy to motivate students to pursue academic music-making by using a novel three-step framework with the assistance of technology that – within the scope of fundamental knowledge, the practical application of analysis, and the usage of music arrangement and composition – allows teachers to incorporate the higher-order components of evaluation and creation at the start of the course study.

E-learning development on Health Promotion for Music Performers in Taiwan

By Mei-Ju Su; Yu-Huei Su; Yaw-Jen Lin; Heng-Shuen Chen

In Taiwan, approximately 62.1% of all music majors in universities have suffered musculoskeletal injuries. Health Promotion in Schools of Music Conference (HPSM) 2004 proposed that university music departments provide a “course that covers the occupational health concerns related to music.” The conference concluded that schools of music play a vital role in helping reduce the incidence of performance-related injuries, as first contact medical surrogates. Therefore, the courses on Health Promotion for Music Performers (HPMP) are important for the students of music majors. HPMP course needs the interdisciplinary experts, music and medical experts. Method: In the research, we use e-learning on the courses, Health Promotion for Music Performers. To facilitate cross-domain interaction and cross-school mentoring, an e-learning model was adopted. The collaborative efforts of the Department of Music at the National HsinChu University of Education (NHCUE) Department of

Music and the Department of Family Medicine at the National Taiwan University (NTU) College and Hospital of Medicine enabled NHCUE's Graduate Institute of Music to conduct the 'Health Promotion for Music Performers' (HPMP) Course and adopted an e-learning model since the spring of 2009. Result: HPMP course by e-learning will make the medical expert easy to get the teaching aids and case experiment sharing by e-learning in his hospital. After transitioning to an e-learning model, HPMP now utilizes the JoinNet digital platform.

Music Solfeggio Learning Platform Construction and Application

By Qiao Zhou, Baihui Yan, Jiangxi Science & Technology Normal University

To better develop the music learning, this paper completes the design and realization of a music solfeggio teaching system by combining with practical teaching conditions of the music academy. Firstly, it elaborates the main functions needing to be possessed by solfeggio teaching system by starting from actual demands of the users, puts forward overall design scheme of the system, and gives detailed design to main function module and database of the system. Secondly, it analyzes and researches theoretical basis of the solfeggio teaching system design, and proposes the construction scheme of teaching knowledge point repository and question bank system, including solfeggio repository information setting and system paper constructing strategy. It is indicated by the system analysis results that: this platform design provides an effective learning and inspection means to the implementation of solfeggio teaching. Thus, it draws the conclusions that: learning system of this paper can directly serve for course learning of the students majoring in music, and it has

important practical significance and application value in promoting development of the music education informationization.

An Ontology-based Model Driven Approach for a Music Learning System

By Yingchun Tian, Feng Chen and Hongji Yang

E-learning systems are attracting much attention in both research and industry areas. Because of massive data and complex functions, the means how to organise the information and build architecture effectively to improve the e-learning system development is considered to be a kernel issue. This paper proposes an ontology-based model driven approach for a music learning system named the Pedagogical ElectroAcoustic Resource Site (EARS II). Firstly, requirements are extracted into vocabularies under Natural Language Processing (NLP) theory. Then, a Reference Ontology (RO) is designed based on Learning Technology System Architecture (LTSA) and vocabularies are classified into Application Ontology (AO) based on RO. Finally, Platform Independent Model (PIM) is generated from AO following proposed transformation rules. Furthermore, the implementation of the proposed approach into EARS II is provided, showing it's feasible and applicable to facilitate the modelling process and increase the maintainability and reusability of the implemented system. The proposed approach has the potential to develop general e-learning systems without the user is connoisseur of philosophy ontological or pedagogical, while giving him the approach steps that works in an Object-Oriented environment.

An Open and Multi-Layer Web Platform for Higher Music Education

By Adriano Baratè , Luca Andrea Ludovico

This paper describes an open platform for the advanced experience of music information. Based on the IEEE 1599 standard, such an environment supports an integrated and synchronized multi-layer description of music pieces. This approach can be particularly suitable in higher music education, where the structured organization of a multiplicity of free resources can foster advanced and engaging learning activities. After addressing the subject of openness in music education and introducing the key features of the IEEE 1599 format, some clarifying examples and educational scenarios will be discussed.

A multidimensional taxonomy of digital learning materials for music education

By Federico Avanzini, Adriano Baratè, Luca Andrea Ludovico, Marcella Mandanici

Technological development, ubiquity of digital devices and the widespread possibility of Internet access have completely changed the way people approach the musical experience, significantly broadening the audience of producers and users of music. These advances make it important to reflect on how technology has changed the way music is taught and learned, and on the new possibilities offered by tangible, large-scale, augmented, and virtual reality interfaces. The purpose of this chapter is to systematically analyze and discuss digital learning materials explicitly conceived for a wide pedagogical area known as computer-based music education. In order to catch the aspects of heterogeneity on one side, but also, on the other side, make some relevant clusters emerge, the authors introduce a multidimensional classification schema. In particular, the proposed taxonomy considers the axes of cognitive approaches and methods, learning goals, categories of end users, implementation

technologies, interfaces, and intended school types and levels. Finally, the most significant trends and practices are evaluated in order to introduce innovation in music education curricula.

Virtual Virtuosos: A Case Study in Learning Music in Virtual Learning

Environments in Spain

By Alberich-Artal, Enric; Sangra, Albert

In recent years, the development of Information and Communication Technologies (ICT) has contributed to the generation of a number of interesting initiatives in the field of music education and training in virtual learning environments. However, music education initiatives employing virtual learning environments have replicated and perpetuated the traditional model, resulting in sub-optimal use of ICT and curricular delivery that contributes little to the fostering of autonomous learning. A review of online music education initiatives reveals generalised behaviour that suggests the existence of a little researched field holding great scope for further investigation. This case study reflects how the instructional paradigm applied to education results in a less than optimal use of technical resources and the web, limiting the capacity of students to manage their own learning. This pedagogic paradigm is invoked not so much as a premeditated strategy but as the result of reliance upon traditional practice. Despite the existence of both individual and collective communication channels, teachers default, with preference, to a one-to-one relationship with the student. The resources are in place and teachers with the requisite technological background exist, however, none of these inputs are exploited sufficiently due to the instructional model implemented.

Dynamic Music Lessons on a Collaborative Score Annotation Platform

By Véronique Sébastien, Didier Sébastien, Noël Conruyt

The recent progress in Information and Communication Technologies gave birth to advanced applications in the field of instrumental e-learning. However, most of these applications only propose a limited number of lessons on predetermined pieces, according to the vision of a single music expert. Thus, this article introduces a web platform to create music lessons dynamically and collaboratively, with the assistance of a semi-automatic score annotation module: @-MUSE. To do so, we first describe a new methodology to design such a platform: Sign Management. Then, we detail its general architecture as an Iterative Sign Base System based on a common practice in music learning: score annotation. Lastly, we give various algorithms to generate relevant annotations (explanations) on a score, based on the analysis of musical patterns difficulty.

“The Next Level”: Investigating teaching and learning within an Irish traditional music online community

By Ailbhe Kenny

Online music communities offer a new context and culture for musical participation globally. This article, employing a socio-cultural theoretical lens, examines how the Online Academy of Irish Music (OAIM) functions as a teaching and learning online community for Irish traditional music. Findings from qualitative case study research present observations of practice from the OAIM website, forums, video tutorials, and

Facebook posts over a 9-month period. In addition to these collective insights, findings from participant logs and interviews with the tutors offer individual insights into the online case study. Questions are posed regarding the pedagogy of e-learning, the development of a “shared practice” and the influence of roles and relationships within the community. The online medium of interaction raises important issues for the growing technological culture of music teaching and learning and the study seeks to understand this new context for musical participation.

New Technologies for Music Education

By J. Sastre; J. Cerdà; W. García; C.A. Hernández; N. Lloret; A. Murillo; D. Picó; J. E. Serrano

This paper describes the objectives and work developed in the project New Technologies and Interfaces for Music Education and Production by Universitat Politècnica de València and the Computer Music Group from Carnegie Mellon University: Several education scenarios and application typologies are designed, the use of collaborative creation with Web 2.0 is proposed, and the first implemented applications are described.

A Brazilian popular music digital library oriented to musical harmony e-learning

By Cruz, Fernando William Ferneda, Edilson Brandão, Márcio da Costa Pereira Costa, Evandro de B. Almeida, Hyggo Oliveira de Cunha, Murilo Bastos da Sousa Júnior, Rafael Timóteo de Denicol, João Ricardo E.Silva, Carlos Alan P. da

This poster presents a digital library proposal conceived for people interested in acquiring knowledge about Brazilian popular music harmony, particularly in Choro.

This Brazilian musical style is a complex popular music form based on improvisation, although it contains classical music elements such as the counterpoint. We are proposing two ways of accessing the music virtual library content: a guided navigation mode, in which users interact with a cooperative Web-based learning system; and a free navigation mode, in which users can make their own queries, both through browsers or client applications.

Effect of blended learning and learners' characteristics on students' competence:

An empirical evidence in learning oriental music

By Chamila Nishanthi Edward, David Asirvatham & Md. Gapar Md. Johar

Blended learning emerged as the most popular instructional design strategy in the field of education since last decade to present date. In fact, it is well acknowledged that blended learning approach significantly elevate students' engagement and competency in learning process. Despite immense potentiality, many countries are still lag behind adopting this instructional design, such as Sri Lanka. Therefore, the primary aims of this study are two fold, (a) to investigate the effect of blended learning and learners' characteristics on students' competence and (b) to investigate the effectiveness of blended learning in teaching Oriental Music. This study mainly carried out among the senior secondary schools students at Colombo, Sri Lanka. A mixed methods, experimental and survey, were carried out to test the effectiveness of blended learning and identifying the important factors for enhancing students' competence in learning Oriental Music. Results of independent sample t-test confirmed that blended learning is effective in terms of improving students' performance in learning Oriental Music. Similarly, regression analysis confirmed that attitude and

motivation are the two most important determinants for improving students' competence. This study fulfilled an existing research gap by utilizing blended learning to teach highly traditional abstract art. Results of the study contributes to the curriculum designing field with novel ideas to adapt in hybrid instructions to teach secondary level students effectively. The curriculum designers will make use of these findings during innovation and future researcher would be benefitted to overlook more possible platforms to deliver music instructions. It will help them to understand how their set objectives have been achieved in technology integrations and seek for improvement where necessary.

Score Analyzer: automatically determining scores difficulty level for instrumental e-Learning

By Véronique Sébastien ¹ Henri Ralambondrainy ¹ Olivier Sébastien ¹ Noël Conruyt

Nowadays, huge sheet music collections exist on the Web, allowing people to access public domain scores for free. However, beginners may be lost in finding a score appropriate to their instrument level, and should often re-ly on themselves to start out on the chosen piece. In this instrumental e-Learning context, we propose a Score Analyzer prototype in order to automatically extract the difficulty level of a MusicXML piece and suggest advice thanks to a Musical Sign Base (MSB). To do so, we first review methods related to score performance information retrieval. We then identify seven criteria to characterize technical instrumental difficulties and propose methods to extract them from a MusicXML score. The relevance of these criteria is then evaluated through a Principal Components Analysis and compared to

human estimations. Lastly we discuss the integration of this work to @-MUSE, a collaborative score annotation platform based on multimedia contents indexation.

EXPERIENCES AND EXPECTATIONS OF STUDENTS AND TEACHERS IN THE FIELD OF USING E-LEARNING IN MUSIC EDUCATION.

By FRIDMAN, LIBOR; PETRÍK, ŠTEFAN; MARTINKA, PAVEL;
BRODNIANSKY, MICHAL

The paper reports a part of the results of a broader research, in which the evaluation of e-learning by music teachers was examined. As a part of the paper, we are presenting the research findings on the views of music teachers (n = 238), but also future music teachers - students (n = 117) on e-learning, perception of the use of electronic media and their effectiveness in the implementation of music education. The results of the empirical research confirm the openness of both music education teachers and students to these innovations in Music education, which are implemented through the use of e-learning and e-textbooks.

Assessing teachers' perspectives on giving music lessons remotely during the COVID-19 lockdown period

By Michele Biasutti , Roberta Antonini Philippe , Andrea Schiavio

The recent COVID-19 health emergency has forced many music teachers to adopt remote teaching methods. The present paper investigates the practices and strategies used by conservatory-level music teachers to give lessons online in different European countries and the USA. Data from an exploratory qualitative study were collected

using semi-structured interviews covering aspects such as curriculum design, lesson implementation, evaluation, examination organization, and time management skills. Interviewees offered rich descriptions of their experiences of teaching both music theory and instrumental lessons. Findings were analyzed using an inductive method, giving rise to the following categories: COVID-19 and the music school, technology, curriculum planning, managing instrumental lessons, examinations, strengths, and limitations. Participants discussed their ability to manage technology, and they employed skills such as flexibility, problem solving, and creativity in their curriculum planning and in using a variety of remote learning tools. They revised curricular activities and online teaching strategies and methods were associated with the musical instruments played. They argued that online teaching was very time consuming (e.g., planning activities, preparing materials, and exploring the new possibilities of technical tools) and that it was stressful to have lost a satisfactory work-life balance. They reported becoming more organized in the management of their activities. Internet platforms were found useful for sharing material, communicating, exchanging messages, and keeping records of all the work done. Participants learnt to use video clips systematically for modelling and teaching. They were aware of the strengths and limitations of e-learning, and they called for more institutional support and opportunities for professional development.

Learning Model of E-Learning Basic Music Theory for Elementary Students

By Reyhan Swarna Medica*, Yudi Sukmayadi

Most teachers in elementary schools who teach music have no expertise in their field. This causes the students to have a lack of understanding related to the subject matter

presented both in terms of theory and practice. This article describes an e-learning-based learning model on basic music theory for elementary students. The instructional media used is e-learning in the form of Santo Aloysius School's LMS (Learning Management System) platforms. The course material presented including numbered musical notation and symbols musical notation, sound recognition, and pitch. The objective of this study is to make the students have a better understanding of the difference between pitch based on numbered musical notation and symbols musical notation. The instructional media design process includes preliminary study, the stage of making the media in the form of music applications and scripts, and making the product. This e-learning model also included learning material videos, exercises, and quizzes, which can make the students practice their musical skills theoretically and practically in learning pitch, duration, and accentuation. Therefore, this e-learning model can help teachers teaching materials and provide solutions to the learning needs of elementary students.

Signature Pedagogies of Music Learning by the Means of MOODLE across Russian and Indian Approach

By Authors: Svetlana V. Karkina , Balwant Singh , Roza A. Valeeva

The article introduces the possibilities of distance learning education based on MOODLE for musical pedagogy in higher education. The main trend of research work is the signature pedagogies of music based on the study of Shulman. According to his works authors try to find key ideas of music teaching that will reflect the way of thinking of professional musicians and allow to establish the most progressive methods of learning for future music teachers.

During the research, authors compare two approaches in music teaching- Russian and Indian. They stated that despite the dissimilarity in some diametrical ways of the music creation in these two countries, these approaches have some similar characteristics. The most important of them is a central part of sound in music at all and the necessity to improve the listening skills and the understanding of musical meaning. Based on this signature pedagogies of music, authors use the method of comparative analysis and critique for development of musical skills among bachelor students.

The research approach was based on collection of data from distance learning recourse in MOODLE. These data include the musical performance allowing to activate the skills of listening music and understanding the meaning of musical pieces. The analysis of these data allowed to state that during the research work students become more attentive listeners. They better understand the music and the way of thinking of famous musical artists. Also they have shown the readiness of students for creating their own interpretation of music pieces and competence in the argumentation of the concept of performance.

The Interactive Design about Chinese Classical Music Based on E-learning

By Yuan-shuo Li , Tong Chen

With the decline of Chinese classical music and the reduction of learning craze in recent years, we hope to help Chinese classical music to re-enter the public's attention. We not only provide the Chinese classical music a new form of display, but also give Chinese classical music lovers a new way of entertainment for music appreciation. Based on the analysis and research of music psychology and interaction

design, we put forward the design method of combining 3D surround effect with Chinese classical music to emphasize the sense of music. In order to illustrate the feasibility of this design method, we develop a classical Chinese music interactive design APP. Users can combine Chinese classical music and other elements of musical instrument in ancient orchestra, which will make users experience the charm of China Classical music and create their own unique music. We aim to provide users a new method of experiencing Chinese classical music. We expect that this approach will explore innovations of E-learning on digital mobile in the succession and development of Chinese traditional culture. The idea of combining 3D surround and classical Chinese music will help more traditional culture into people's vision.

Effects of Information Technology Integrated Music Ecological Education on Learning Interest and Performance

By Yang Liu

Along with the digital era, information technology, as the medium for the integration into various teaching fields, aims to have teaching methods become more diversified and allow teachers applying proper information technology as the teaching tool to induce students' learning motivation so as to facilitate students' interests in active learning. Music has existed since the civilization of human beings. Music, existing in human life, could release emotion, enhance psychological health, and further change quality that it plays a critical role in current national development and is the new hope of national competitiveness. With experimental design model, 316 students of Music School of Xiamen University of Education, as the research objects, are proceeded 15-week (3 hours per week for total 45 hours) information technology

integrated music ecological education. The research results show significant correlations between 1.music ecological education and learning interest, 2.music ecological education and learning performance, and 3.learning interest and learning performance. Finally, suggestions are proposed according to the results, expecting to understand the effect of information technology integrated music ecological education on students' learning interests and performance. It stresses on the learning content being able to combine with life and social development and enhance the sensitivity to surrounding affairs to achieve the goal of lifelong learning.

D.I.M.A. on-line multimedia resources for Music Education

By NEDELCUT NELIDA

On-line multimedia resources in music teaching can offer a wide scale of tools leading to the shift of the teaching process from one closed and rigid, teacher-oriented to an inciting and interactive educational process centered on learners.

Multimedia is defined as media made up of various contents, including both visual support (photographs of scores, videos) and texts that one may access interactively.

As teaching support, multimedia has an increasingly role for providing education. The research made by the specialists of the Romanian Music Academy "Gheorghe Dima" aims to explore the possibilities and the most efficient ways of adapting the online multimedia resources to music education's specific requirements. This is achieved through the development and monitoring of an interactive pilot application called D.I.M.A. (direct impact multimedia application), functioning as an online terminological anthology, useful for information gathering and study. This article will

provide theoretical insights into the on-line musical instruction process. D.I.M.A. shall be implemented on an e-learning platform.

A Web-based Music Learning Environment: A Case Study of Users Experiences

By Inkeri Ruokonen , Anu Sepp , Aleksi Ojala , Lenita Hietanen , Vesa Tuisku , Heikki Ruismäki

The purpose of the study is to research how music is learned in a web-based learning environment. The users of a web-based learning environment were asked to perform a self-assessment about their music learning. The research question was to determine which kind of learning experiences students had when studying music in a web-based learning environment. The other aim was to discover the students' main interests in their music studies and the kinds of support they needed for their web-based learning. Finally, the users were asked to suggest some ways to develop a digital learning environment of music. The data was collected by using an e-questionnaire that was open for all users who studied on a Finnish web-based music learning environment during one study year. Data from 82 respondents was analysed using content analysis and the results are presented through quantitative tables and figures with qualitative results obtained from the content analyses of answers to open-ended questions. According to the results, most of the users found that the motivation to study music increased during the studies. Preferences of learning methods were individual but most of the respondents hoped web-based learning environment could be developed together with blended learning settings where web based learning and contact lessons could be integrated. The individual support from a web teacher and a peer community were also needed.

E-Learning in Music: A Case Study of Learning Group Composing in a Blended Learning Environment

By Inkeri Ruokonen , HeikkiRuismäki

New educational technology has become an important part of modern teacher education in Finland today. Studying music in Finnish teacher education means both studying music didactics and developing musical skills. With only a limited number of contact lessons in the regular curriculum, new learning environment solutions with new technology are needed. This is a qualitative case study of 16 students' experiences of studying group composing in a blended learning environment. The purpose of the study is to enrich face-to face, teacher-led learning in music with new technology and the e-learning environment and to develop a new technology-based blended learning model for student teachers' needs. The research questions considered the kind of learning experiences students had in studying music, especially group composing in a blended learning environment and how a blended learning environment can help students learning music in a creative learning process. The research is a qualitative approach to students' experiences of a new blended learning environment. The blended learning method used was the rotation method, in which students learn through a schedule of independent online study in the "Rockway" music-e-learning environment, other informal online learning environments, social media and face-to-face classroom time during a 5 credit points music course. The qualitative data has been collected during the studies through group interviews and reflective writings of students' learning experiences that took place after the course. The data has been analysed by content analysis. The major advantage of blended

learning is that it offers more opportunities for independent and constructive learning. The experiences of a blended learning environment were positive and the teacher's role was seen as an important and helpful mentor for more independent learning and creative learning in groups. According to students' experiences, the greatest benefit from e-learning was achieved by those who already had some musical background before these studies. The use of information and communication technologies improved students' attitudes towards independent learning concerning their musical skills.

Student Teachers' Guided Autonomous Learning: Challenges and Possibilities in Music Education

By LenitaHietanen , InkeriRuokonen , HeikkiRuismäki , JukkaEnbuska

This study focuses on connecting student teachers' formal and autonomous learning to solidify their music education paths. The data were collected through observations, interviews and student teachers' questionnaire responses. The study seeks a new implementation to support processes enabling student teachers to teach music in grades 1 to 6. The findings confirm those of previous research on the diversity of student teachers' knowledge and abilities. Additionally, the paper presents an instruction model for integrated music education. The model's core ideas are applicable to other subjects which require both training skills and understanding about the concepts essential in the phenomenon discussed.

Defining e-services using a co-design platform: Example in the domain of instrumental e-learning

By Olivier Sébastien, Noël Conruyt, David Grosser

One of the aims of expert knowledge management via information and communication technology is to improve the efficiency of knowledge transfer to non-specialists, and to facilitate the implementation of service-products that are adapted so as to be truly used. The aim of this paper is to describe an example in the domain of instrumental e-learning. Drawing on activity theory, this article describes a methodology that aims to guide the design process along the lines of the usage process. The co-design platform (CDP) allows the service designers and users to determine service-product definitions together, to facilitate the emergence of their uses. Some of the experiments are still in progress as the development is iterative. To illustrate this method, the authors have designed and implemented an instrumental learning e-service for guitar music (e-guitare).

The CDP gives a greater understanding of the transformation of the tool (proposals) into an instrument (proven demand), which is essential to the process of supplying the demand.

Social media as an opportunity for pedagogical change in music education

By Salavuo, Miikka

Many higher education institutions have been utilizing learning management systems in their teaching. These systems and the ways they are used, however, usually implement a traditional instructivist approach to teaching. Social networking platforms (SNPs) and online communities are an integral part of most music students' everyday lives. SNPs are used for creating connections, but also for sharing one's music, providing information as well as for learning. They can also introduce a student-

centred approach to learning by offering ownership of the environment to its core users, and by creating a need to communicate and contribute to a community of practice.

Learning through producing : the pedagogical and technological redesign of a compulsory music course for Finnish general upper secondary schools

By Näytä kaikki kuvailutiedot

This scientifically oriented applied study is comprised of two blind peer-reviewed articles, two sets of e-learning materials, and a summary report. The study focuses on developing practical e-learning materials and theoretical principles for a novel pedagogical approach named Learning Through Producing (LTP). The rationale for the developmental work arose from the notion that collaborative and technologically aided creative music making seems to take place only randomly in many Finnish secondary music classrooms although core curricula for Finnish general upper secondary schools have guided music teachers to implement collaboration, creative work and the use of technology to their teaching for decades. The intent of LTP is to open up one possible way of systematically broadening the scope of institutional general music education, from reproduction and performance towards sustained interaction with shareable musical artefacts such as tracks and music videos.

The LTP approach was developed in the context of the Finnish general upper secondary school compulsory music course, using design-based research as a methodological toolkit. After the initial principles of LTP were addressed and the preliminary conceptual prototypes of the e-learning materials were developed, both sets

of e-learning materials were re-developed, first with author's own students (1st and 2nd research cycle), and then towards the end of the research period in four different Finnish general upper secondary schools (3rd research cycle), with the intent of creating new understandings that would lead to developing the generative principles of LTP.

Blended Learning and Sustainability in Music Education: Motivation to Learn

By MICHELE DELLA VENTURA

Music Education is one domain that has traditionally taken place in a face-to-face mode. E-Learning has had an enormous impact on higher education yet there has been only limited application of E-Learning to Music Education. Many teachers consider the E-learning impossible to use with own musical discipline: the main problem is that they don't know this new instrument and its potentialities.

This paper presents the research which took place at musical classes in the third grade of high school. The experimental group implemented besides classical didactic materials for class learning also the interactive computerized environment OpenSounds. The results have shown a motivation for learning in the computerised environment and statistically significant higher results achieved by the experimental group in the area of theory, analysis and composition.

Gender Differences in Music Content Learning using a Virtual Platform in Secondary Education

By Desirée García-Gil , Roberto Cremades Andreu

Current education outlooks concur on the need to design effective learning settings adapted to the digital environment which students live in. The rapid development of software and computer tools has generated new teaching and learning spaces (Gamage, Tretiakov, & Crump, 2011).

Leaving aside the issues derived from their implementation in the classroom (Girvan & Savage, 2010), this study looks at the use of a virtual education platform for the subject of Music in Compulsory Secondary Education (ESO). The specific focus is to analyse how the music contents contemplated in Decree 38/2015 from May 22, which establishes the curriculum in Compulsory Secondary Education (ESO) and the baccalaureate in Cantabria, can be covered in this space, as well as to examine gender differences in the attainment of these contents. To this end, we began with the current curriculum, following a mixed research design that on the one hand included a semi-structured interview with the teacher, and on the other, a questionnaire administered to 93 students of Year 1 of ESO in a public school of the Autonomous Community of Cantabria. The results obtained help justify the genesis and teaching purpose of the education platform, and at the same time present the perception and actual appropriateness of this setting for participants. The conclusions evidence that the gender differences found are the consequence of the attractive design of the activities, a circumstance that fosters greater motivation in the subject of Music in ESO.

Mobile Learning in Music Education

By Jason Chen

To follow up the trends from an Asian perspective in globalization and technology provided by the Core Perspective, this section further discusses the recent development of mobile learning in music education and ICT in music education in Hong Kong. A detailed study of 120 teachers, including 60 in-service and 60 preservice music teachers' concerns and expectations regarding mobile learning in the music curriculum, was conducted in 2014 and 2015, respectively, in Hong Kong. The top three concerns among teachers were equipment setup, technical support, and financial burden. The top three expectations are e-learning resources, interactive functions, and self-directed learning. This chapter proposes an ecology of ICT in music education as an “outside in-inside out” relationship, where cultural practices involving mobile learning can be brought into the school, enhanced at school, and then fed back into the digital world at large.

Enhancing Music Learning Experience through a Dedicated Web 2.0 Oriented Service

By Olivier Sébastien , Noël Conruyt , Stéphane Calderoni

The Web 2.0 philosophy has brought new ways of using the web as a content repository and a sharing platform. Non-computer skilled people can now publish their own text, images, videos and/or sounds and take part in communities created around topics they like.

Our idea is thus to use this new communication mechanism to assist skill learning. Skill is indeed a difficult knowledge to learn on a text form as it is hard to describe movements, gestures or procedures in this way: sometime, a picture or a video is better than a thousand of words.

As a popular field of experience, we have focused our attention on music learning, and more particularly on guitar pieces learning. Music is very representative of skill learning, it is both a physical and an intellectual activity. The “Gloss2U” service we describe in this article takes into account the specificities of this learning process, especially as events are time-related.

To achieve this, we rely on new equipment conditions that are nowadays gathered. User- friendly multimedia tools opened new horizons and broadband networks (ADSL, cable, ...) are becoming more and more common. Almost everybody is a potential content producer with just a webcam or a cell phone. Our system is therefore audio and video based and users interact with each others by submitting contributions, called glosses, in the context of the piece they are learning. A dialogue starts between student users (learners) and experimented ones (professors), to discuss encountered problems and the way to solve them. The other strength of this system is that it can act as a knowledge repository for forthcoming practitioners.

MUSIC IN E-LEARNING CULTURE

By Felician ROȘCA

Although they look like a paradoxical phenomenon, vocational studies have found their place in distance education. The beginnings of this type of education can be found in Japan and Israel where experiments were conducted in the early 1990s looking for teaching methods addressing groups of children playing keyboard instruments that can be monitored through digital systems. Today we have hundreds of this type of school. Even if the subject seems to be controversial the e-learning system, with its modern distance learning concepts has a well-established tradition by

the series of graduates of all major music subjects at “Gh. Dima” Music Academy in Cluj Napoca. This system and especially the possibility to update it are the main focus of my paper and I would like to offer a professional analysis as well as a number of practical ideas to adjust the education system and the methodology that can be used in a university education system that has a functional e-learning platform. The practice in the vocational music education system, both under its theoretical and practical forms implies the development of a platform and a specific support. If as far as the theoretical subjects are concerned we have a platform based on texts, graphics and experiments, in the field of music they will be based on examples from music, practical lessons, musical analysis regarding different music interpretation techniques, creativity studies and stage techniques, etc. Such a system implies a bulk of methods that can be recorded on video and that are obligatory in a student-centered interactive system.

Design of a Flipped Classroom Platform for Online Music Education in Colleges and Universities Based on the Internet

By Hui Lin , Yang-bo Wu

Online music education is one of the important contents of college education.

However, the traditional education mode is too old to cultivate students' innovative consciousness and music practice ability. With the development of Internet technology, great changes have taken place in various fields, and the curriculum system and the mode of music education in colleges and universities have also been affected. Based on the background of “Internet”, this paper constructs the classroom platform of online music education in colleges and universities, and puts forward clear provisions

on education contents, teaching methods and teacher training. The research proves that the designed platform can effectively improve the quality of classroom teaching, provide high ability compound talents for the society, and has a very good application prospect.

Construction of Network Teaching Information Interactive Platform of Traditional Music in New Media Era

Jun Zhou , Liang LuYang-bo Wu

In order to optimize the online teaching effect of traditional music, the interactive information platform of online teaching of traditional ethnic music is constructed. In view of the existing network information interaction platform in the actual operation, the logic of teaching information interaction is chaotic, which leads to too many times of delay generated by the platform. Aiming at this problem, this paper constructs a kind of national traditional music network teaching information interaction platform in the new media era. After constructing the interactive logical relationship of network teaching information, the collected interactive data of teaching information is taken as the processing object, and the platform architecture is built. The data involved in the teaching of national traditional music is outlined by using digital communication technology to realize the real-time interaction of teaching information. After building the platform test environment, we use a traditional interactive platform, the interactive platform in literature and the interactive platform designed in this paper to carry out experiments. The results show that the interactive platform designed in this paper has the least time delay and is suitable for practical use.

Function Design of Music Online Education Network Virtual Classroom Platform

By Yang-bo Wu , Hui Lin , Wei-hua Zhu

Music online education network virtual classroom platform has diversified theoretical basis, emphasizing open development and interaction between teachers and students. The music teaching videos spread on the Internet spread the music teaching resources to the outside, which has the characteristics of open, extensible, flexible and quasi permanent separation of distance teaching. According to the theories of education system cybernetics and constructivism, this paper puts forward the function of music online education network virtual classroom platform by using the methods of literature analysis and case study. This paper answers how to build a music micro class distance education platform, expounds the conditions to realize the music education platform, and analyzes the obstacles and Countermeasures to realize the music education platform.

On the use of a multimedia platform for music education with handicapped children: A case study

By Maria-DoloresCanoRamonSanchez-Iborra

The use of Information and Communication Technologies (ICT) for students with special learning needs is being particularly studied by the research community. Likewise, music has gained recognition through the years in the field of learning disabilities, playing lately a key role in providing a better quality of life to people with special needs. However, there is still a gap on the combination of ICT and music teaching tools. In this work, we present the results of a case study where students with disabilities took a 3-month introductory music course using the

multimedia tool called PLAIME (PLAtform for the Integration of handicapped children in Music Education) developed by the same authors. The aims of this work are three-fold: i) to explore the capability of disabled students to acquire musical knowledge using PLAIME, ii) to measure the improvement in their ICT skills, and iii) to observe their behavior along the study. At the end of the program, students showed an advance in their music knowledge and a positive improvement in behavioral development, being able to perfectly manage the computer platform.

Twitter As a Music Education Tool to Enhance the Learning Process:

Conversation Analysis

By Michele Della Ventura

In the age of Web 2.0, the social media (SM) represents an important part of the communication in sharing information and, therefore, knowledge. The term SM is often used without clear outlines, and teachers and students do not understand the importance that they could have in a learning process. Teachers and learners can change the method to communicate: when communication is efficient, both the student and the teacher take advantages. This research presents a case study that analyzes the effect on teaching and on learning brought by the use of Twitter to support the classroom lessons of Music Technologies. Students were involved in team work, based on the Problem-Based Learning principle. The focus of the research was the analysis of the conversation among students and teachers to identify problems in the learning process and enhance the student's skills. Results showed that students with dyslexia compensated for their processing deficits by relying on learning strategies and help seeking.

Teaching Music Theory Using Blogging: Embracing the World of Web 2.0

By Eddy K. M. Chong

Music educators have been aware of the changing world in which modern professional musicians work. This was clearly evident in the numerous papers presented at the 2006 ISME-CEPROM international seminar . Thus far , changes or expansion of curriculum/programme content might have largely sufficed, with the basic teaching/learning paradigm remaining intact. But, with the rise of the Net Generation and a music marketplace that is increasingly globalized in its practice and outlook, music educators now need to meet these emerging challenges in order to better prepare our future musicians for the new networked world. Taking my point of departure from George Siemens's basic recognition that "We derive our competence from forming connections", this paper translates the notion of "connections" to propose a way of transforming our teaching of music theory through the use of blogging, one of the Web 2.0 tools, to meet the needs of n-gen musicians.

Exploring the On-line Learning Means to Music Education; Prelude Platform

Case Study

By Nedelcut Nelida¹, Pop Ciprian Gabriel ²

Music technology has become a recognized subject area in its own right. There is no doubt that technology has become increasingly prevalent in schools all over the world and that there are still many exciting developments in this area on the horizon.

The benefits of using ICT in the educational process reside both in the manifold instruction opportunities it offers and in the transformation of relationships among learners, teachers and the learning equipment.

Inside the European Prelude project, a Music Education Consortium formed by 7 Countries (Greece, Austria, Estonia, UK, Sweden, Spain and Romania) conducted an investigation on the ways of effectively integrating ICT in music education through the creation of a common pool of tools and applications for music education. The Prelude project is designed to address the educational needs by employing up- to-date findings from the fields of music education, computer and web based applications. Teachers are crucial to the successful use of ICT. They should be required and positively encouraged to assume new roles and responsibilities if ICT is to be effectively applied to enhance teaching and learning quality. Initial teacher education for all teachers should include compulsory ICT training to an adequate level of competences and skills. The main focus for teachers should relate to developing ways of fully and appropriately integrating ICT use into their existing teaching/learning programs and in particular within that, to developing ways of optimizing the level of cognitive/creative challenge involved in the students' use of ICT and devising appropriate and valid methods for assessing or evaluating student achievements as demonstrated during the course of such use.

There is a consensus that the effective and widespread use of information and communication technology has great potential in enhancing learning opportunities and learning quality.

Musimage: Using social multimedia to engage pupils in classical music appreciation

By Laurent Moccozet; Camille Tardy; Hassan Lakhdar; Anne Lakhdar; Richard Rentsch; Michaël Wirth

Music teachers in secondary schools are facing a great challenge when attempting to successfully engage pupils in classical music appreciation. The distance e-learning sector has for a long time neglected to address the specific needs of teaching and learning music. This paper describes the use of social multimedia technologies to engage pupils in classical music appreciation. The approach relies on different hypotheses: nowadays, classical music needs to be a global experience, combining audio and visual; classical music is actual and generates emotions; pupils need to be active and creative even though they are not able to compose or create music. The resulting social educative platform is described together with the experiments and results that were conducted to evaluate the approach.

Technology of Education and Music Teaching: New Responses to Old Issues

By Roberto Agostini

This chapter discusses the relationship between education technologies and music teaching with reference to four activities developed in an Italian middle school as part of the project of experimentation “Classi2.0.” This project aimed to enhance the ability to perform songs in ensemble and offer experience in the practice of arranging. It also sought to strengthen rhythmic competences, and offer experience in composing rhythms using digital sequencers while also stimulating critical reflections

on the musical taste of the class. Furthermore the project sought to provoke critical reflection on media and youth consumption practices.

The Design of an Online Music Learning Portal

By Matthias Klein, University of New Brunswick, Canada ; Yuhong Yan, National Research Council, Canada ; Ning Wang, Han Liang, University of New Brunswick, Canada

This paper briefly introduces an ongoing project dealing with the design of an Online Music Learning Portal. The motivation of this project is to provide complex, multimedia based performance art education and asynchronously delivering this music related learning content to self-studying individuals over the internet (WBT, Web Based Training). We discuss some general software design issues of this portal and possible solutions to some of the technical problems and innovations. Instead of implementing the entire portal by ourselves, we aim to integrate existing open source frameworks and standard technologies. Openness and collaborations with third parties are focal points of our work as we believe that they are a key for the success of such a project.

Blogging transforming music learning and teaching: Reflections of a teacher-researcher

By Chong, Eddy K. M.

There has been much recognition that blogging can develop writing skills, foster reflective thinking, enable higher-order learning, including the development of critical thinking skills, and facilitate collaborative knowledge building. In the area of music

teaching, blogging has been particularly used to facilitate collaborative compositional projects. In this article, the teacher-researcher reflects on his five-year experiences of using blogging in his music theory and analysis classes to examine how the adoption of this particular piece of social software has transformed not only students' learning of music theory but also his own teaching. In effect, we witness the extent blogging has become a 'disruptive technology' in a particular music-educational context. The discussion will heighten music educators' awareness of some of the potential benefits of blogging (or similar social software) as well as possible pitfalls or tradeoffs pertaining to music learning.

A College Music Teaching System Designed Based on Android Platform

By Muhammad Usman

Today's rapid evolution in information and communication technologies affects all sectors, including education, and has a positive impact. As a result, teachers need to use technology effectively and keep up with innovation to meet the needs of the next generation. The college music educational system was always an important part of higher education in China, and the corresponding music curriculum system has gradually been established. This curriculum system has been instrumental in the systematization and standardization of China's music industry, and it has produced a large number of outstanding musical talents for the country. The goal of this research is to discover advanced and dependable teaching methods. With the growing popularity of mobile intelligent terminal devices and the expanding application of the Android platform, using a mobile intelligent terminal for university courses' learning has become a more powerful technical feature. Through the development of an

intelligent learning application using the Android intelligent platform, students can practice exercises and evaluate themselves, allowing them to analyze their weak points based on their evaluation value, whether in class or after class, and then facilitate their learning. In this paper, I present my original perspectives and proposals on music education in colleges and universities, based on literature, analysis, and study, as well as my years of practical experience. To assure stability of the suggested framework, scalability, and sustainability, I have used the Model View Controller (MVC) architecture. This framework is based on the mobile client of Android that teaches and queries college music remotely and controls smart music. According to the experimental data, online music teaching has a greater learning effect on music skills and enhances traditional music performance by 25%. In terms of increasing interest in musical courses, this online college teaching information platform has the ability to raise 74% of students' awareness.

Developing Musical Creativity Through Activity Theory in an Online Learning Environment

By Chih-Feng Chien (Chung Yuan Christian University, Chungli, Taiwan), Brent G. Walters (Chung Yuan Christian University, Chungli, Taiwan), Ching-Yieh Lee (Chung Yuan Christian University, Chungli, Taiwan) and Ching-Jung Liao (Chung Yuan Christian University, Chungli, Taiwan)

An online general education platform, e-Holistic (e-HO), was developed to support digital learning. Following Burnard's (2007) adoption of Activity Theory (AT) in designing music education to galvanize learners' creativity, the authors' study extended her theoretical framework through a hypothetical model they designed. From AT, this

article investigates a number of elements—musical activities (tools), e-HO (community), emotional arousal (object), and musical creativity (outcome). Through the operation of the AT system, 733 students immersed in musical activities in e-HO were able to compose music even without any musical background. The purpose of this article is to report how an e-HO online activity helps arouse students' emotions and inspire their musical creativity. The structural equation modeling (SEM) analysis indicates that all research hypotheses were supported, and the musical activities on e-HO predicted 71.6% of students' self-assessed musical creativity. Finally, the implications of the authors' findings are reported for the future development of online musical education.

Technology and music education: A mapping of ISME international meetings publications from 2010 to 2018

By Marcos da Rosa Garcia, J. Araldi, J. Magnaldo de Moura Araùjo, H. Tanaka, R. Cristiano Lourenço da Silva, T. da Silva Sales, R. da Silva Melo, D. Ramalho Alves, & G. de Lima Marques

This article presents the results of a research that aimed to perform a bibliographic mapping of works that relate technology to music education published in the annals of world conferences and seminars promoted by the International Society for Music Education (ISME) from 2010 to 2018. The methodology used was an integrative bibliographic review of publications made available on the ISME website, referring to the last five meetings. Given that the documents are digital, the first phase of the research consisted on searching all the documents, using the following keywords: online/distance education, blended learning, virtual, e-learning, digital, m-learning,

networking, media. We found 49 works, whose initial reading and cataloging resulted in the following categories: music creation, diffusion and consumption in cyberspace; online and hybrid music education; knowledge, skills and training for the 21st century; technological resources for teaching and learning music. Among the main results, we highlight the relationship of some digital music teaching and learning platforms to the classroom, the exploration of social media in the teaching of music, the experiences with online courses, the exploration of computer graphic resources, and the pedagogical use of virtual reality among others. It is possible to see that the studies improve the discussions on technology and music education as they relate various forms of the relationship among people, technologies and music. However, there are still gaps in studies on the subject, such as assistive technologies for music and innovative methodologies, showing that it is a dynamic field in constant transformation.

Music education with digital technology : changing identities, researching digital classrooms, and strategies for change

By Ruthmann, Alex, Finney, John, Seddon, Frederick, Dillon, Steven C.,
Leong, Samuel, Burnard, Pamela, Savage, Jonathan, & Collins, David

This Symposium is about change and innovation in music teaching. It comes at a time when music education, schooling and learning are being redefined. The school can now be accessed from home, home accessed from school, and the rest of the world from both. A revolution is taking place with the demands for creativity, innovation, fresh models of learning and the melting down of traditional school subjects into a wash of generic skills. And at the centre of this revolution, sometimes

referred to as the third industrial revolution, is Information and Communication Technology (ICT). Music and ICT, or what is now preferred in official talk within many countries as music technologies, has come to be viewed by governments and their managing agencies as a primary catalyst of change. Indeed, technologies are considered to be the drivers of change inviting frontier thinking and boundary breaking. Music has long been at the forefront of technological advancement, with music educators harnessing its potential, long before the advent of digital technology. Music and music learning is at ease in the digital age. Yet if this is so, then why is there a gulf between what needs to be done in music teaching and the resources available to do it? In this Symposium, each presenter illustrates what we can learn from research, concerning both the potential of technology to enhance music teaching and learning, and the potential of research to fuel the change process in teacher practice. Presenters will remind us about what teachers can learn from how students experience collaborative music making and how to use the notion of musicianship to define the computer as instrument. A new use of music technology arises through the development of case study research within virtual and present collaborative learning spaces, which have the potential to fuel the change process for teachers. The potential of e-learning environments to provide collaborative and supportive learning spaces along with ways of changing practice, policy and teacher professionalism will also be discussed. Valuable ways for music educators to engage and extend students learning using online technologies which simultaneously develops the skill of reflective practice are suggested. How technology can play a creative role in music teaching and be used as a tool to create a more inclusive music curriculum will be complemented by lessons from education reform experiences of Australia, Singapore and Hong Kong

with testimony to the advantages of locating teachers in the context of imposed change while taking into account the influences of their beliefs on their practice. Ways of rethinking how music teachers can become more active agents of change in music education with the imperative of placing music teachers at the front and centre of the research process will be shared. The perspectives shared in this symposium present a unique international view and open the doors to further understanding of the complexities of teaching music in the digital age. The contributors from America, England, Italy, China and Australia highlight the need to look for learning across and beyond the walls of classrooms and schools. Their contributions emphasize the teacher's role in educational change and provide a comprehensive view of how students interact with and utilize technology in music learning. Such recognition, research and sharing of good practice by teachers as practitioner-researchers is fundamental if we are to develop the best teaching and learning pedagogy in our music classrooms today.

Technologies

Developments in internet, and multimedia technologies are the two key enablers of e-Learning. According to Rosenberg (2000), successful e-Learning depends on building a strategy that optimises the technology within an organisational culture that is ready and willing to use it. Various technologies, which are constantly improving, have been developed to facilitate e-Learning. Technologies that have been selected for discussion in this paper include Virtual Classrooms and blogs .

The increasingly popular trend in e-Learning, particularly in higher education, is the creation of Virtual Learning Environments (VLEs), sometimes in combination with a Management Information System (MIS) to create a Managed Learning Environment in which all aspects of a course are handled through a consistent user interface standard throughout the institution. Virtual education refers to instruction in a learning environment where teacher and student are separated by time or space, or both, and the teacher provides course content through course management applications, the internet, multimedia resources and videoconferencing among other technologies. A virtual classroom is therefore a learning environment created in the virtual space. It improves access to advanced educational experiences by allowing learners and lecturers to participate in remote learning communities using personal computers. The quality and effectiveness of education is the process improved through the support of a collaborative learning process. The authors demonstrate the possibilities of expanding access to music education by the use of pre-recorded lessons in practicals, which can be imported to remote areas for use by learners.

A blog, which is a contraction of the term „web log“, is a website, normally maintained by an individual, with regular entries of commentary, descriptions of events, or other materials such as graphics or video. Many blogs contain commentary or news on a particular subject. Others function as more personal online diaries. This paper explores the use of the „blog concept“ in music education, particularly as a means of interaction between learners and lecturers. Such uses are demonstrated within the presentation.

Opportunities and Challenges of Content

Delivery in Music Education through E-learning

Opportunities

E-learning creates various opportunities that could enhance the blending of computer-based strategies with classroom situations as well as with modes of delivery that could take teaching and learning services out of the campus walls. With reference to music education, existing opportunities for various modes of delivery include blended learning, distance/open learning, virtual learning and collaborative music activities. Some of these are highlighted below.

There is also an increasing realisation of the need to create Virtual Learning Environments to cater for distance and open-learning services both within the Department of Music and Dance, and within the entire School of Visual and Performing Arts, where the Department of Music and Dance is housed. This would provide an opportunity for those unable to access on-campus facilities to obtain some or all of their music education from remote teaching sites through the internet. These services would benefit both Kenyans and the international community.

Wide access to the internet provides students with opportunities to work from home, thus enabling them to complete a course of study while interacting with course

facilitators online. Similarly, lecturers can interact with their students while away from campus attending conferences or other pressing duties.

Through e-Learning, collaborations with other music departments around the globe are strengthened, and new ones are made possible. Through engagement in discussion forums, blogs, wiki and online collaborative activities, endless possibilities for sharing knowledge are created. Such collaborative approaches encourage formation of discussion groups involving students from diverse institutions interacting with each other. Collaborations between lecturers also provide opportunities for intercultural research activities, where faculty from different countries and continents conduct research within their localities, thereby producing rich findings representative of their different cultural and economic settings.

Challenges

While many opportunities for expansion exist, the adaptation and implementation of e-learning courses creates certain challenges that may have remarkable impact its processes. With regard to implementation of e-learning courses in music education, the following are some of the challenges that have been noted:

1. Reluctance to move away from fixed traditional approaches used over the years.

Resistance to change causes people to shy away from e-Learning since it differs fundamentally from such approaches;

2. Experience in the use of computers, computer ownership and efficient time management also determine the rate of adaptation and implementation of e-Learning approaches;
3. Technological shyness. The need for requisite technical skills among instructors or lecturers is necessary for the realisation of effective results following the dissemination of e-content. Staff working with students online must be able to understand the content as well as be at least reasonably or highly trained in the use of computer and the internet.
4. Proper implementation of e-Learning presupposes availability of individual computers and the necessary software for the students. This is because e-Learning frequently requires hands-on activities, whether one is participating in asynchronous or synchronous activities. Insurance of music as a practical subject requires some special software for use in notation and transcription. There is therefore a need for a wide spectrum of relevant computer or internet-based resources;
5. Time is also an essential factor in developing e-content. In contrast to traditional lesson preparation, the amount of time required to develop and implement e-content may at times be prohibitive to its utilisation. Since e-content is expected to be handled within the same time frame as conventional face to face instruction, there is need for careful time management if one is to cover the required level of course content;
6. The lack of proper or constant internet connectivity and the speed of the internet, brought about by inadequate facilities and slow dial-up speed respectively, also poses a challenge to proper implementation, more so in some rural areas. This may hamper the relay of distance learning courses;

7. Despite all the merits of e-Learning, there is a danger that students may rarely attend face-to-face, on-campus classes, resorting to purely online study. This possibility is highlighted in the Sloan Report on Music Education by Hebert (2007), which reveals that students generally appear to be at least as satisfied with their online classes as they are with traditional ones.

Result

Results in this study have been favorable, indicating that this new educational environment for the study of music is viable. Real time and time-shifted learning each have merit, but in isolation, each mode of communication has significant drawbacks. The most effective learning has occurred through blending real-time (facilitated) and time-shifted (self-directed) forms of communication.

The first results of the study of music via e-learning over the Internet have been encouraging. Student "M" and Student "B" continue to develop skills in music making, and in the process, they have had the opportunity to connect with other young musicians from different geographic locations.

Certain barriers must be overcome, including those of resources and time. For this type of learning to occur, certain equipment and materials are needed. The cost of obtaining these materials may be prohibitive. In addition, this arrangement has required adult expertise in its initial setup and some ongoing technological support. Accordingly, an adult possessing basic computer knowledge must be available to provide assistance if necessary.

Conclusion

In resource-limited environments, the prospect of musical development through the study of an instrument can be sparse. In particular, children in resource-poor rural settings may have little opportunity to discover the delight of expressing the inexpressible through a musical instrument. However, new means to realizing that joy, while simultaneously growing creativity, intellect, discipline, and perseverance, are emerging.

Although we have seen many positive developments thus far, the current pedagogical arrangement is lopsided, and is regrettably, strictly from a Western musical perspective. Consequently, we are investigating other avenues in which to build a more comprehensive music education (not only for children in Macha, but also for North American students).

As we progress in our e-learning experiment, it is essential to search beyond one limited musical viewpoint. The village of Macha has a rich tradition of singing, and that continues to thrive. In fact, many traditional Tonga songs were digitally preserved through the Macha Works' Vision Community Center, but were lost in an unfortunate fire. These kinds of initiatives will be ongoing. However, in addition, it will be beneficial to cultivate other partnerships in which non-Western musical traditions are shared and taught over a period of time to those in different geographical locations with focus on teaching/learning, rather than solely on performance.

At a deeper level, new bridges will need to be investigated regarding core differences in cultures, e.g. relational versus rational mindsets. This subject matter goes beyond

the scope of the current study, but is a critical component of the e-learning experience, nonetheless.

The Internet offers a multitude of possibilities for exchanging musical expertise, and perhaps a new window into many multifaceted African musical traditions. Thus, in the pursuit of unconventional pathways in the education of children through music, it is imperative that we explore alternative insights regarding educational strategies in the celebration of cultural diversity.

Reference

- <https://www.udemy.com/course/react-the-complete-guide-incl-redux/>
- <https://www.udemy.com/course/python-and-django-full-stack-web-developer-bootcamp/>
- [https://en.wikipedia.org/wiki/E-learning_\(theory\)](https://en.wikipedia.org/wiki/E-learning_(theory))
- http://www.ijbssnet.com/journals/Vol._2_No._11_%5BSpecial_Issue-June_2011%5D/19.pdf
- https://d1wqtxts1xzle7.cloudfront.net/53917774/websci10_submission_28-with-cover-page-v2.pdf?Expires=1638871290&Signature=aXyLEKq00J4kBcN339yfx1QLDViLEdSHxE5P6hAn3KL-hkePJ7qsxMVhGZTUfkXCYHv1BwjUgsHnSFsI6uiyQ6whYWBxldfxo6sHQzblDwL2V9m1IQFWPq3MNOQj~ISCg~i-Nfktv3kmoX8ZbLariQqNcQaR8KVuO1LvC8VAHLFauDPj4ZQ~-dhxcifNZ97cjn0zqAbzf03OZ2DHyIwiMEMonsCNWF-yP99YKqdr0LE9A4~cBX3Etp5KzvcEqHV20-

[q4SAzFNfsbLZCfjaG9D3Hs4nTLFRwl33xhFVGWF7Ii89ChzZNwsD1tlo8NFpR
VbxildyYTqyXuqeJsPOvw__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA](#)