

# Tertiary Music Teachers' Best Practices in Utilizing Music Notation Software as an Aid to Musically Challenged Students

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## Abstract

This study focused on the best practices of tertiary music teachers in utilizing music notation software as an aid to musically challenged students. The phenomenon refers to those who have the difficulty in music aptitude, rhythmic, tonal audiation, and music theory. With the use of purposive sampling, ten participants provided significant answers to the questions on the best practices in utilizing music notation software through an interview guide and was treated using thematic analysis. This is a single case study and is anchored on cognitive theory of multimedia learning of Richard Mayer where students learn more deeply through sounds, picture, and words. The results confirm that the best practices of the tertiary music teachers in utilizing music notation software even with no formal training, boil down to being efficient and effective by providing alternative means and navigation of its basic features, resourceful by adjusting to the underutilized features of the software to cater the needs of the musically challenged students, and making use of the opportunities brought by music notation software to aid the instruction of musical and non-musical students in the classroom.

**Key Words:** Music notation software; Tertiary music teachers; Musically challenged students; Case study

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## 1. Introduction

Music educators feel that music training is one of the most difficult disciplines to teach in the twenty-first century. Byrd and Simonsen (2015) assert that music is one of the most complicated, difficult to study, and critical cultural phenomena. Indeed, it is one of the most intricate, challenging, and significant occurrences known to man. Music creation processes can be viewed as complicated systems with multiple operational levels, and music does not rely on logical constructions that are not backed up by physical experience (Vaggione, 2001). In comparison to other topics, it is a skill-based subject. Making it more difficult for teachers to teach the topic as a result of their lack of knowledge with music and notation especially in dealing with musically challenged students - those who have difficulty in music aptitude, tonal and rhythmic audiation, and music theory - to engage themselves and be taught with practical theories and applications of music (Mabini, 2021). It poses a barrier for teachers in their efforts to connect content to learners (Julia et.al., 2019). As the proverb goes, a little knowledge is a dangerous thing, and this is equally true for music notation as it is for anything else.

It has become an unavoidable prerequisite for teachers to be proficient in navigating technical tools, notably music notation software, in today's generation of industry 4.0. According to Prensky's (2010) study, generation z learners are dubbed digital natives because to their excessive time spent each day on computers, laptops, smartphones, and watching television. With the advancement of technology, software has aided all practitioners, particularly music teachers, in developing music notation software and being aware of how western notation is used and changed. Music notation is a graphical language composed of many types of symbols and their positioning in relation to one another. Western music notation has been critical in preserving musical works created over the course of several centuries (Ojanen & Lassfolk, 2016). It contributes significantly to the teaching and learning processes in the twenty-first century through the integration of these music notation tools. Notation software is a type of computer program that enables the creation, modification, arrangement, recording, and reproduction of all musical components in compliance with the rules. The computer's soundcards can play back the notation written with this software, allowing the user to make edits and/or revisions to the composition. It also adds to the development of the user's creativity as a result of the experimental working environment it provides. With this, music notation software augments the level of interest among musically challenged students in the learning process.

Sibelius, Finale, and MuseScore are the most often used music notation software in the chosen research environment. In response to the dynamics of today's generation, the integration of technology into the teaching process among the tertiary music teachers is viewed as a necessity for enhancing the quality of learning. The majority of the tertiary music teachers have been introduced to a variety of technological tools thereby using most of its features to cater to the needs of the learners. However, a number of music teachers are amenable to the fact that at some point, they utilize the software without receiving adequate orientation to all of its functions. This was the case of the music teachers in one of the State Universities in Tacloban City, Philippines. The school doesn't offer music production courses which simply imply that no one among the music faculty is adept in music notation software but is able to shift this problem into an opportunity. It is on this premise that this research was done to examine and describe the best practices of the tertiary music teachers in utilizing music notation software as an aid to musically challenged students.

### 1.1 Statement of the Problem

This study therefore intended to describe the best practices of the tertiary music teachers in utilizing music notation software to high school students being integrated in the teaching process. Specifically, the study was aimed to answer the following questions:

1. What are the best practices of the music teachers in utilizing music notation software as an aid to musically challenged students?
2. How do tertiary music teachers adjust to the underutilized features of the music notation software as an aid to musically challenged students?

### 1.2 Theoretical Framework

This study is centered on Richard Mayer's cognitive theory of multimedia learning (2002). It asserts that cognitive theory of multimedia learning is predicated on three central assumptions: that information is processed through two distinct channels (auditory and visual); that channel capacity is limited; and that learning is an active process of filtering, selecting, organizing, and integrating information. According to the "multimedia principle," "people learn more thoroughly from words and visuals than they do from words alone." Adding text to images, on the other hand, is ineffective for multimedia learning. The objective is to evaluate instructional material in light of how the human mind functions. In relation to the study conducted, this main framework will serve

as the main theory to support the study regarding music notation software as an aid and supplement the instruction that involves musically challenged students.

## 2. Review of Related Literature

Information and communication technology (ICT) has a significant impact on the development of educational curricula in a number of countries. Students in the twenty-first century are expecting more from their music education than ever before. Technology is transforming the landscape of teaching and learning for today's students since they are growing up in a world that is overflowing with new devices. In Flanders, the education ministry established and defined a framework of ICT competences for expected results relating to the knowledge, abilities, and attitudes that learners should possess at the conclusion of primary school (Tondeur et.al, 2007). Information and communication technologies (ICT) are often perceived as increasing learning in both classrooms and families, with this belief fueling their fast spread and adoption throughout modern countries. However, they are not yet so ingrained in ordinary social behaviors that they are taken for granted, with schools being slower to adapt lesson ideas than they were to integrate computers into the classroom (Livingstone, 2012).

The music industry makes extensive use of digital technology in a variety of applications, including performance, composition, recording, and publishing. This type of technology is reshaping music and education and the way individuals engage in a variety of traditional musical activities (Russel-Bowie, 2009). Modern music education should embrace technological advancements as well as the shifts they bring about in students and teachers (Gorgoretti, 2019). National policies and programs can be an important tool for the realization of ICTs promise in education (Kozma, 2008).

## 3. Methodology

This is qualitative research conducted using a single case study approach. As cited by Yazan (2015), case study is a study of the particularity and complexity of a single case, coming to understand its activity within important circumstances. The number of participants in this study was maximized in accordance with the saturation of data. Ten participants met the criteria who were purposefully chosen and provided the necessary information for the study. Additionally, the study was conducted in one of the higher education institutions in Tacloban City, Philippines offering elective music courses. The researcher chose this location for the following reasons: 1) The institution provides music education sessions to students enrolled in teacher education programs; 2) The researcher has access to the necessary data needed. Semi-structured interviews were used to elicit pertinent data to the tertiary music teachers and while focus group discussions with the same participants were conducted to confirm specific responses. The researcher provided an interview guide as the main instrument used in conducting this investigation. Six steps (6) were followed in the analysis (Clarke & Braun, 2013): 1) Familiarize yourself with your data; 2) Assign preliminary codes to your data to describe the content; 3) Search for patterns or themes in your codes across the different interviews; 4) Review themes; 5) Define and name themes; and 6) Produce the report with the help of Atlas.ti Qualitative software for transcribing, coding, and generating themes. To secure the trustworthiness of the data, the researcher utilized triangulation procedures with the colleagues of the music teachers for additional data.

#### 4. Results and Discussion

This section presents the data gathered from the participants through the semi-structured interviews. Specific themes were generated out of their responses.

Q. 1. What are the best practices of the music teachers in utilizing music notation software as an aid to musically challenged students?

##### Theme 1. Alternative Approaches to Utilize Music Notation Software

**Internet source as guide.** Making every second count by being able to deal with the situation was the most frequent response. The participants shared that results matter more than the knowledge they have on the software. Being dependent to the internet was an easy option for the music teachers as everything is available on the internet with just a click away such as YouTube and Google. Despite the prevalence of inadequate trainings on music notation software, the internet revolution is just an easy option. Everyday items communicate data with or without human interaction. With this, hardware, networking, data storage, data analysis, data presentation, human-computer interface, platforms, embedded systems programming, web technologies, ethics, privacy, and security are just a few of the technical and social themes covered by the internet (Burd et.al., 2018).

*“We will not wait for somebody to teach us; YouTube is readily available to help us navigate the features of the software. In as much as possible, I only choose MuseScore since it’s user-friendly compared to the other music notation software available on the internet.” (P9:Line6)*

*“My advice to the new teachers really is to be more knowledgeable about it since it’s the trend now so more music teachers are no longer using the old or conventional manner of music writing. Anyway everything is on the internet. You just need to be patient about it.” (P1:Line 10)*

*“Yeah, I’ve tried it already and I was able to finish the piece I was about to transcribe, yeah, just google it.” (P4:Line 7)*

**Seeking for Assistance.** Asking the guidance of a more-knowledgeable-other was one of the go-to solutions of the participants. Gomez & Ma (2020) described helpfulness as varied directly with disconfirmation, suggesting that students found more learning essence when their experiences exceed the defined expectations. In its essence, this particular solution matters especially results drive the music teachers to utilize music notation software even more since observable positive behaviors from the musically challenged students are evident even though the means needed a more-knowledgeable-other. In their own words:

*“I was a bit anxious about this because I can’t keep up with the young ones. So what I usually do, I just ask my son to download it for me, assist me with it, and call him whenever I have questions.” (P6:Line40)*

*“I must admit I often ask someone to assist or do it for me. Whenever I have an arrangement, I always request my former student to encode my written copy or even sometimes transcribe my work.” (P10:Line8)*

##### Theme 2. Utilization of the Basic Features

**Navigation of the Basic Features.** With the little knowledge they know about the software, the music teachers tend to just navigate the basic panels based on what they need in their

teaching and musical compositions. The present study pursues the goal of showing the efficiency of some basic features for such a recognition task in the realistic situation where music notation software is utilized. A varied, and easily accessible features from different music notation software is used to ensure better utilizations of the software (David & Richard, 2004).

*"Whenever I try to encode a score sheet may it be for my class or for my group, the chorale, uhm..all present in the score are the basic features of the software. I don't even know about the playback having dynamics on it. I just heard from the other teachers that the software has a dynamic feature on it."* (P2:Line10)

*"...I usually just use the software for encoding and transcribing music scores"* (P6:Line8)

*"Honestly, I am not yet aware how these features are used. I don't click on something because it might crash the project I'm currently working."* (P9:Line30)

Q. 2. How do tertiary music teachers adjust to the underutilized features of the music notation software as an aid to musically challenged students?

### Theme 3. Adjusting to the Underutilized Features of the Music Notation Software

**Exploring Advanced Features.** Giving the learners the opportunity to safely develop exploratory behaviors even when they act outside their action boundary and guiding learners to search for more reliable information to develop exploratory behaviors that would enhance the transfer of skills to various performance contexts enables individual exploration capabilities (Hacques et.al.,2019).

Free exploration among the readily available advanced features of the software helped the music teachers in getting acquainted with why and how these features work. For as long as their project is saved and no fear of losing a particular file needed in a pertinent work, musical creativity of the music teachers emerges. According to them:

*"...when I'm on my free time, I just explore the downloaded software on my laptop. Sometimes I encounter error prompts and sometimes I'm just amazed how these new technological developments improved and helped us lessen our work,"* (P7: Line 29)

*"Uhm yeah, what I usually do after testing the advanced features, I immediately show it to my students specifically those who needed more attention. You know Sibelius, right? There is an advanced feature I don't know if we can consider it advanced but I really like the classroom teaching features since all topics are there."* (P1: Line 40)

**Need for Adequate Training on Music Notation Software.** The use of computer music software in the realm of music education has gone through several stages. Multimedia, music production, and music systems are all things that come to mind while thinking about music. With the advancement of computer technology, music has become more accessible. The production technology has vastly improved including advance features ready for consumption for those in the field of music production (Pan, 2021). Music software is increasing and becoming common. In a standard university music education program, all of the music teachers are adept in utilizing music notation software.

Most of the music teachers in the research environment were optimistic that even from a fact that due to no formal training on its optimum utilization, the music teachers are still hoping for a formal training related to music notation software utilization.

“Personally, I do not know much about the software that was installed by my student on my computer. However, I am hoping that someday, the university will initiate or just in *the unit level to conduct trainings on music notation software.*” (P8: Line 30)

“*I am not sure about it, I am just hoping that more opportunities will come for the likes of us who know little about this..*” (P2: Line 25)

“...I agree with your suggestion before to really conduct trainings about music notation software like whatever software it is for as long as there is proper guidance from an expert.” (P5: Line 29)

#### 4.1 Triangulation

To establish the trustworthiness of the data, triangulation procedures have been secured in this study through overt observations and interview. Based on the observation, it was evident that the tertiary music teachers are looking for more ways and means in utilizing music notation software. Interview coming the colleagues of the music teachers and students have proved that the significant statements coincide to their best practices in utilizing music notation software.

“*Yes, sir. Maam (P3) is really using music notation software in our class. It was exciting since all her lessons are in the software.*” (Student 1: Line 4)

“*Yeah, I can vouch him for that, that those are his practices in using music software. We just also hope that more training initiatives will be held for the likes of us who know nothing about it*” (Colleague 2: Line 5)

#### 5. Conclusions

Undoubtedly, the positive effect of technology on music education will increase as technology develops. The results of the study were in consonance to the claims of Mayer’s (2002) Cognitive Theory of Multimedia Learning. As such, it is important to ensure that the rapid development of technology is transferred to teaching environments and that both teachers and students receive the training necessary to use music notation software effectively. Different forms of music notation software, including those embedded in search engines such as from Google Chrome, are frequently used by the music teachers for its easy accessibility features; hence, breaking the barrier of paid music notation software impeding the progress of its utilization. Moreover, the utilization of music notation software is not isolated on the idea that only those who knows to manipulate can utilize the software. More means of its productivity can be achieved through alternative approaches and navigation of its basic features. However, this interaction points to the necessity of more trainings and workshops on advanced utilization of music notation software. With the increasing importance of music notation software in teaching and music performance, the ability to use such must be developed as one of the competencies of a music teacher in the 21<sup>st</sup> century. The way in which tertiary music teachers are trained to integrate music notation software into the classroom and music performance will directly impact the quality of instruction and musical creativity of the learners especially the musically challenged students, future curriculum updates, as well as the need for in-service training for new music notation software in the future. Based on the results, the best practices of the tertiary music teachers in utilizing music notation software boil down to being efficient and effective, resourceful, and making use of the opportunities brought by music notation software to aid the instruction of musical and non-musical students in the classroom.



## 6. Recommendations

The need for more trainings on the utilization of music notation software was seen as a primary concern thereby affecting the tertiary music teachers' productivity in music teaching and other music related productions. Music teachers should be more patient in navigating the basic and advanced features of the music notation software to cater the needs of the musically challenged students. Private and public institutions must provide subscriptions to more music notation software available that will fit to the technological skills of the music teacher. More opportunities must be provided by Higher Education Institutions (HEI's) to tertiary music teachers inclusive of different ages to cater not only the new generations but also those senior faculty members who need enrichment trainings on music technology. Researches in the future must investigate how musical creativity is developed through the use of music notation software. Are certain music notation software capable of developing the musical identity and musical creativity of the learner?

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