Student Performance in Online Music Classes During Pandemic Setting

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ABSTRACT

Several studies have been conducted on how the pandemic affected college students, but not much is known about how it affected music students in online classes. The study aimed to determine factors affecting their class performance. Using the causal-comparative approach, the study collected 314 music students from five music schools in the Philippines through stratified random sampling via a Google form. The research instruments were adapted and modified to fit the local situation and research goals. It was validated by three experts, tested through a pilot study, and established its content validity and reliability. Multiple regressions and structural modeling equation organized the data set. The findings revealed that student satisfaction with the learning environment and social presence, gadgets used, as well as teaching approaches, and the student-centered approach, have a significant effect on their performance in online music classes. This study has implications for music schools to enhance their music program in terms of the online music curriculum and teacher pedagogy and facilitate better student performance in online music classes.

Keywords: Structural model, online music class, learning environment, social presence, student-centered approach

INTRODUCTION

Globally, the Coronavirus Disease 2019 (COVID-19) has widened the gaps in the instruction area. It has profoundly affected the Philippine and international higher education systems. Worldwide, countries have urged citizens to exercise caution. The implementation of lockdown and stay-at-home techniques were due to the prohibition of large gatherings to flatten the curve and control the spread of the disease (Sintema, 2020). This pandemic resulted in the closure of numerous schools, colleges, and institutions, particularly in the private sector, and a shift toward online instruction to contain the spread of the virus. This abrupt shift to online education alarmed many teachers and students, as a sizable portion of the population has unstable Internet access and limited access to electronic devices. Contingency plans were adopted to ensure the university's continued ability to offer courses and allow students to continue their studies. However, developing countries, such as the Philippines, have areas without a reliable or functional Internet connection, posing a significant barrier to fully online instruction. There is a lack of reliable and sturdy infrastructure that supports the facilitation of this new learning style, as well as want of e-learning facilities that follow health regulations, good distance learning curricula, proper teacher preparation, and reliable and robust curricula.

The pandemic affected all areas of education, particularly the performing arts and music programs. Music students had to deal with specific stressors in addition to the general stressors experienced by many during the coronavirus disease outbreak e.g., social isolation, potential lost income, or fear of infectious disease (Rosset et al., 2021). Online teaching has a lower quality than one-on-one teacher-student contact in instrumental and singing classes, owing to reduced sound transmission fidelity and teachers' inability to perceive body movements, posture, and performance emotions holistically. Daily routines have been disrupted, such as practicing in the university's rehearsal rooms or socializing with classmates, and restrictions on ensemble practice, chamber music, choir singing, and public concerts and performances are impossible. Students fear "losing" a critical year of development. Several studies have focused solely on the positive features of online learning. However, the specific repercussions for music students are unknown. The current study attempted to examine students' attitudes, satisfaction, instructor teaching approaches, and performance in online music classes and determined the most reliable predictors of students' performance in online music classes.

FRAMEWORK

The study is anchored on Social Constructivism Theory, The Self-Determination Theory, Moore Transactional Distance Theory, and Conceptual Model for Teaching Music Online to support initial assumptions that performance in online music classes is affected by several factors.

Social Constructivism Theory in the Online Learning. The fundamental idea behind social constructivism theory is that knowledge is developed through interpersonal interaction, highlighting the collaborative nature of learning. Despite common misconceptions, the constructivist theory is frequently employed as the foundation for contemporary classroom-based learning. It asserts that active participation is crucial for effective learning, shifting the role of the teacher from an authoritative figure at the front of the class to a facilitator or instigator of learning. In this approach, teachers guide and support students as they construct their understanding and knowledge by engaging in experiences and reflecting on them (King, 2018). On the other hand, online learning has traditionally followed a transmissionist approach, being instructor-centered and delivering information through technology. In this model, learners are passive recipients, essentially empty vessels waiting to be filled with information through reading, watching, listening, and absorbing. Johnson (2017), in his exploration of teaching music online, emphasized the need to adapt instructional styles when transitioning to an online setting. Vygotsky's (1978) emphasis on dialogical and interactive aspects of learning, building on Piaget's (1970) and Dewey's (1910) constructivist principles, underscores the importance of adjusting online teaching methods. Drawing on interconnected theories from Bandura (1981), Jonassen (1999), and Vygotsky (1978), which highlight the role of action experience in understanding, interacting with wisdom, and deriving meaning from experiences, it becomes evident that a shift is needed in the instructional style for online education. Applying social constructivism theory to the study, the focus was on examining students' attitudes, their learning experiences, knowledge creation and processing, satisfaction levels, and how online courses could contribute to enhancing their academic performance.

The Self-Determination Theory (SDT). Deci and Ryan's Self-Determination Theory (SDT) (2008) asserts that humans have innate needs crucial for psychological well-being, particularly focusing on self-determination. Self-determination is the ability to make decisions and manage one's life, influencing motivation and success

(Cherry, 2021). The study aims to explore students' attitudes and motivation in online music learning, recognizing that student characteristics significantly impact online learning, particularly in developing countries (Bhuasiri et al., 2012). The theory suggests that an inadequate social context disrupting core psychological needs may lead individuals to feel dominated, fragmented, and alienated (Legault, 2017). SDT posits the need for individuals to constantly engage with the social world, seeking need satisfaction while responding to supportive or obstructive environmental situations. Everyone possesses three universal psychological needs— autonomy, competence, and relatedness—that drive or deter actions. Satisfying these needs promotes psychological well-being, while unmet needs lead to feelings of fragmentation and isolation (Chiu, 2021). When pedagogical design addresses these needs, students are actively motivated to engage in learning tasks.

Moore's Transactional Distance Theory (TDT). Moore's Theory of Transactional Distance (1997) directly applies to e-learning situations. It helps understand and measure the learning dynamic between instructors and students when there is a significant physical or temporal separation. The theory suggests that the distance between students and teachers necessitates students to take responsibility for their own learning. The theory identifies three types of distance learning interaction: learner-content interaction, involving access to course materials through various mediums; learner-learner interaction, facilitating knowledge sharing and collaboration among students; and learner-instructor interaction, encompassing the exchange of information between the instructor and the learner, including feedback and engagement. These components serve as the foundation for much of the research in distance learning. TDT also supports the construct of student satisfaction, considering the "transactional distance" or geographic separation between students and teachers. Moore's concept of 'Transactional Distance' encompasses all educational relationships, defining distance based on dialogue and course structure. This aligns with the study's core objective of enhancing student satisfaction with online learning, as discussed by Abuhassna, Al-Rahmi, Yahya, et al. (2020). The theory underscores that the distance challenges students to take responsibility for their learning, which is logically linked to their academic performance.

Student Satisfaction Towards Online Learning. The contentment derived from learning signifies the sentiments and outlook of learners regarding the learning process or the perceived degree of fulfillment associated with their inclination to

learn, influenced by their learning experiences (Topal and Tomozii, 2014). In the realm of online education, satisfaction has proven to be a pivotal factor impacting the sustained engagement in online learning (Moore and Kearsley, 2012; Parahoo et al., 2016) as cited by She et al., (2021). Previous studies on online learning underscore the crucial role of learners' satisfaction as a key indicator of both learning accomplishments and the effectiveness of implementing online learning systems (Ke and Kwak, 2013). Thygesen et al. (2020) observed that students' pleasure is related to their judgments of the learning environment quality. Even in an online learning mode, children must feel safe physically and mentally before they can perform academically, according to Waldman (2016). To address the genuine learning needs of learners and establish an efficacious learning environment, an expanding body of literature has explored diverse factors determining learners' satisfaction in the online context (Shen et al., 2013; Hew et al., 2020). Among these factors are social presence even in an online learning mode.

There is a strong link between social presence and online learning satisfaction according to Cobb (2011). When students experience a social presence in an online learning environment, Kilgore and Lowenthal (2015) claimed they participate in human-to-human contact rather than a human-to-machine connection. Students interrelate with one another. In growing more familiar with one another, they gain a sense of presence from their online learning environment with their teachers and classmates. Also, Zhao et al. (2014) discovered that having a friendly and collegial learning environment that encourages involvement and engagement motivates students to collaborate.

Johnson's Conceptual Model: Teaching Approaches for Teaching Music Online. Johnson (2020) emphasizes the need to adapt teaching approaches for online learning by incorporating design elements from education, educational technology, and music education. Online educators have diverse approaches at their disposal, ranging from student-focused to teacher-focused. It's crucial for teachers to understand course objectives before choosing an effective strategy. Transitioning music education from face-to-face to online poses challenges, and Johnson proposes a conceptual paradigm considering teaching methods, learning styles, online technology, and student abilities. This model suggests ideas rather than rigidly defining a process.

Figure 1 depicts the layered process's concentric design, with all layers impacting the common middle point: learning. In this part, action descriptors for assistive word associations are presented, as well as implementation instances. The figure

shows how each layer influences its internal and external coatings, allowing for free-flowing flexibility in directing the process to seek the learning output best. Because it depends on multiple human and technological elements linked with each layer, the flow timing from the outermost to the innermost layer is unknown.

For teaching approaches, the author emphasized the following: 1) student-centered, that assigns the learner the task of selecting how to achieve a given learning goal. The transition between layers can be brief, and learners can choose from various components to pursue their goals in the student-centered method. While students have the freedom to explore and make choices, collaboration with peers and guidance from the expert instructor are always available. It's crucial to note the dynamic nature of the model.

Figure 1

A Conceptual Model for Teaching Music Online (Johnson, 2020)
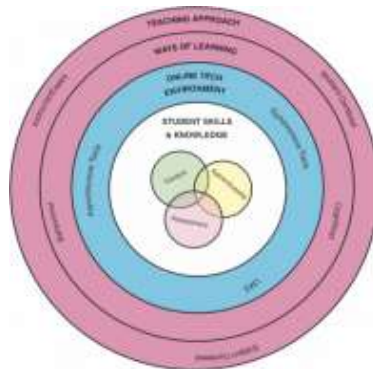
For teaching approaches, the author emphasized the following: 1) student-centered, that assigns the learner the task of selecting how to achieve a given learning goal. The transition between layers can be brief, and learners can choose from various components to pursue their goals in the student-centered method. While students have the freedom to explore and make choices, collaboration with peers and guidance from the expert instructor are always available. It's crucial to note the dynamic nature of the model. If a student faces an insurmountable challenge, the expert instructor can seamlessly lead in overcoming it, shifting to the expert-centered approach. 2) expert-centered approach, in music performance, the expert-centered approach is essential. The skilled instructor, being a professional musician, helps fill learning gaps and takes the lead in defining session topics.

Unlike "instructor-centered," the term "expert-centered" is used to highlight the instructor's musical proficiency. In this approach, the expert instructor demonstrates specific techniques to guide the student toward their performance goals, taking charge and navigating through subsequent layers; 3) subject-centered approach, this is applicable in numerous courses, where at times, the subject being studied assumes a prominent role. The subject's real-time updates can influence both the expert and the learner, especially in fields with ongoing changes, like app development. To illustrate, in a classical music performance course, the discovery of a new work by Bach or Beethoven could shift the teaching approach to be subject-oriented (Johnson, 2020).

Moreover, Johnson (2017) noted that educational technology advancements create opportunities for online undergraduate music courses. However, not all educators are prepared for the necessary pedagogical shifts, with online pedagogy requiring a change in approach. Implementing social constructivist and collaborative online learning models is crucial for supporting student learning in the online environment.

Demographics. Demographic characteristics play an essential role in determining students' academic performance, which has been proven by many empirical studies (Ortega-Maldonado et al., 2017; Brubacher & Silinda, 2019). A study on the effects of demographics on online learning outcomes conducted through a mixed method study revealed the effect of educational levels, gender, and personality traits on online learning outcomes (Yu, 2021). Also, the findings of the El Refae, Kaba, & Elletter (2021) study revealed the impact of demographic characteristics such as gender, college, and status of student, on academic performance. In this present study, age, gender, education level, rank, and years of service, technology use are part of the study. *Technology use*, in online learning has grown significantly, offering advantages such as increased student engagement and improved discussions (Allen & Seaman, 2017). Research indicates that online platforms, including discussion forums, enhance understanding and promote interaction (Panigrahi et al., 2018; Yu, 2021). In the Philippines, the main challenge in transitioning to online classes is a lack of resources due to the ongoing COVID-19 crisis, making it difficult for parents and students to afford the electronics needed for remote learning (Hernando-Malipot, 2020) such as desktop computers. These gadgets play vital role in classrooms, providing students easy access to information and enhancing their research and communication skills (Haleem et al., 2022). However, according to Sana et al. (2013), computers can distract nearby students,

especially when used for social media, diminishing overall class attention. Another gadget is the Smartphones, which has increasingly become valuable in remote education, serving as effective tools for teaching and learning. They offer flexibility in course delivery, granting learners access to online platforms, course materials, and digital interaction. According to Ebiye (2015), smartphones facilitate quick access to information, contributing to student learning. In the Philippines, a recent Social Weather Stations (SWS) poll indicates that 58% of school-age pupils use smartphones for distance learning, with 79% receiving smartphones among those who obtained gadgets for this purpose (GMA News Online, 2021). However, while having gadgets for online learning, the Internet is still considered essential in education, with platforms like Google providing quick access to information. It has revolutionized teaching, enabling global communication and online lectures. While it has expanded educational opportunities, challenges persist, such as the digital divide affecting homework completion (Lynch, 2020). Despite the impact of COVID-19, Internet access remains a significant challenge for teachers in the Philippines, leading to a prevalence of non-online education modes (Medalla, 2021). The pandemic has particularly impacted music programs, where online training falls short in conveying technical and emotional aspects of performance (Hew et al., 2020). This limitation may explain the infrequent use of online music instruction in educational institutions.

The comprehensive discussion of theories and review of related literature, this study hypothesized that demographics, student satisfaction, and teaching approaches impact student in the online music classes.

OBJECTIVE OF THE STUDY

This study intends to generate a model that explains the student's performance in the online music classes.

METHODOLOGY

This study was conducted on 314 undergraduate music students from the selected five music schools within Philippine universities, who were enrolled in the first semester of the school year 2021–2022. The study included two schools in Luzon, two schools in the Visayas, and one school in Mindanao. Seven instruments were adapted and modified after having granted permission by the authors to use their questionnaires. After modifying the instruments, content validation via

expert opinions was employed and these were pilot tested to 30 students who were not included in the study. Furthermore, reliability tests using Cronbach's alpha was conducted. The following instruments had the following indices: Students' Attitude Towards Online Learning (.901); Asmus Magnitude of Motivation (.901); Distance Education Learning Environments Survey (.909); Social Presence (.832); Music Instructors Teaching Methods and Practices (.971); Music Instructors Personal/Connection and Engagement (.875); and Music Instructor's Teaching Approaches (.926). A survey questionnaire via Google form was used that contained seven (7) parts was used to gather data. Structural Equation Modelling (SEM) was used to explain the data set with hypothetical assumptions. It is regarded as a combination of factor and regression analysis to evaluate the statistical significance and meaning of a hypothesized model on the absolute fit indices and incremental fit indices (Hooper, Coughlan, and Mullen, (2008). The utilized Chi-Square ratio x2/df (CMIN/DF), Normed Fit Index, Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), Goodness of Fit Index (GFI), and Root Mean Square of Error of Approximation (RMSEA). The standard fit criterion is reflected in Table 1.

RESULTS AND DISCUSSION

Out of the five postulated, tested, and validated structural models, the assumption of the study which hypothesized that "student performance in music online class is influenced by demographics, student satisfaction, and teaching approaches." Table 1 shows the fit indices and compared to the standard fit criterion as defined by Hooper, Coughlan, and Mullen, (2008); and Hu & Bentler (1999) presenting the standard fit criterion and fit indices of the best fit model: 1.349 for Chi-Square/Degrees of Freedom (CMIN/DF), which is greater than zero and less than two. The P-value is which is .076. shows that there is no significant difference in the data set and the hypothesized model. The Goodness of Fit Index (GFI) is .975, the Normed Fit Index (NFI) is .971, the Tucker Lewis Index (TLI) value is .986, while the Comparative Fit Index (CFI) is .992, and the Root Mean Square Error of Approximation (RMSEA) got .033. Based on the results, this model meets the criteria for acceptable standard measures of indices.

Table 1

*Standard Fit Criterion and Fit Indices for the Hypothesized Model*

Categories	Absolute Fit		Incremental Fit				Parsimonious
	RMR	RMSEA	GFI	CFI	NFI	TLI	CMIN/DF
The Best Fit Model	.018	.033	.975	.992	.971	.986	1.349; p=.076
Standard Fit Criterion	Nearing Zero	≤ .05 - .06	> .90	>.90	>.90	> .90	X^2 to df < 2.0

Figure 2 shows the model that best fit the data set from the 300 music students in the selected music schools of the Philippines. The hypothesized model on students' performance in online music classes is influenced by the demographics, student satisfaction, and teaching approaches is structurally represented in the figure. In this study, demographics (DEMF), was measured with four sub-variables of Number of Music Subject Enrolled (DEMF), Smartphone (SMARTPHONE), Internet Connection Status (ICONNECTION), and Desktop (DESKTOP); Student's Satisfaction (SSAT) which was indicated by three sub-variables of Student's satisfaction towards Music Course (SATIS_SS), Learning Environment (LENVIR_SS), and Social Presence (SOCPRES_SS); and the teaching approaches (TAPP) which were measured by four sub-variables of Teaching Teacher's Personal Connection and Engagement (PERCON_TA), Student-Centered Approach (STUDCA_TA), Expert-Centered Approach (EXPCA_TA), and Subject-Centered Approach (SUBCA_TA) towards the endogenous variable of Student's Performance in the online music classes which is measured by the general weighted average (GWAV).

The figure further shows that student performance in online music classes (GWAV) is influenced by demographic profile (β=0.07); student satisfaction (β=0.53); and teaching approaches (β=- 0.18).

Figure 2

Hypothesized Model on Student's Performance in Online Music Classes: The Best Fit Model
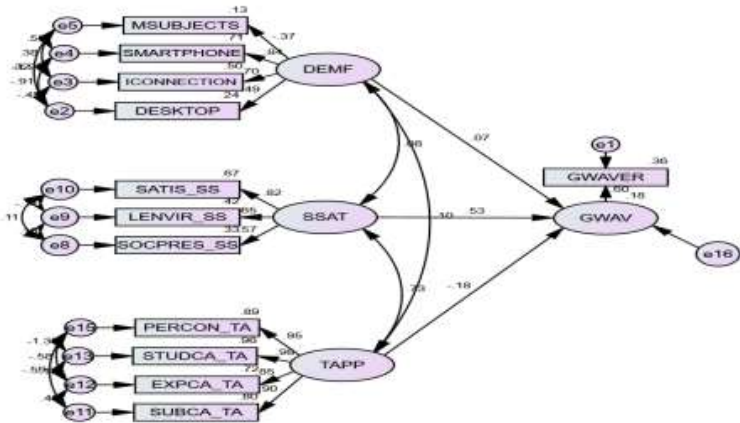
Legend:

DEMF	= Demographic Profile
MSUBJECTS	= Number of Music Subjects Enrolled
SMARTPHONE	= Smartphone
ICONNECTION	= Internet Connection Status
DESKTOP	= Desktop
SSAT	= Student's Satisfaction
SATIS_SS	= Satisfaction in Music Course
LENVIR_SS	= Learning Environment
SOCPRES_SS	= Social Presence
TAPP	= Teaching Approaches
PERCON_TA	= Teacher's Personal Connection and Engagement
STUDCA_TA	= Student-Centred Approach
EXP_TA	= Expert-Centred Approach
SUBJ_TA	= Subject-Centred Approach

Among the independent variables, Student satisfaction was found to have a higher impact on student performance in online music classes compared to the identified demographics and teaching approaches. Keržič, et al.'s (2021) assertion that the impact of e-learning quality on student performance is mediated mainly by student satisfaction with e-learning. In this present study, student satisfaction has a significant relationship and greater impact on student performance in online music classes, as evidenced by three measured variables: student satisfaction in online music courses (SATIS SS) with beta weights of .816, the learning environment (LENVIR SS) with beta weights of .650, and social presence

(SOCPRES SS) with beta weights of .572.

The structural equation student performance in music online classes (GWAV) is: (GWAV) = 0.53SSAT + 0.07DEMF – 0.18TAPP). It further means that 53% of the variation in the students' performance in online classes can be explained by student satisfaction, 7% can be explained by the identified demographics, and -18% by the teachers' teaching approaches.

Students' satisfaction in online music courses (SATIS SS) and learning environments (LENVIR SS) is highly significant in the latent variable of student satisfaction. Thygesen et al. (2020) observed that students' pleasure is related to their judgments of the learning environment quality. Earlier, a discussion on student's satisfaction implied that even in an online learning mode, learners must feel safe not only physically and but also mentally before they can perform academically, according to Waldman (2016); students must feel welcomed, supported, and respected to create a safe learning environment. Personalizing learning helps students learn skills like critical thinking, problem-solving with knowledge and information, cooperation, effective communication, understanding how to study, and developing academic mindsets (Raccoon, 2018).

The measured variable social presence, with beta weight of.572, also supports and correlates with students' satisfaction in online music courses (SATIS SS). There is a strong link between social presence and online learning satisfaction (Cobb, 2011). When students experience a social presence in an online learning environment, Kilgore and Lowenthal (2015) claim they participate in human-to-human contact rather than a human-to-machine connection. As a result, as students interact with one another, they grow more familiar with one another and gain a sense of presence from their online learning environment's other students and teachers. Zhao et al. (2014) discovered that having a friendly and collegial learning environment that encourages involvement and engagement motivates students to collaborate.

Results have shown that the demographic profile with beta weights of .068 relates to the performance in online music classes which means that only 7% of the mentioned demographics influence student performance in online music class. According to VanderStel (2014), research has demonstrated that demographic characteristics are linked to student success. Furthermore, Hanafi and Noor (2016) claimed that academic achievement literature indicates that various factors influence emerging adult academic performance. Individual characteristics, family history, gender, age, motivation, and social, cultural, socioeconomic, community, institutional, and other demographic aspects are all considered.

Table 2

Standard Regression Analysis of Weights and Beta Coefficients (DEMF, SSAT, TAPP)

VARIABLES			B	S.E.	C.R.	BETA	P
GWAV	<---	DEMF	.068			.068	
GWAV	<---	SSAT	.251			.532	
GWAV	<---	TAPP	-.062			-.182	
GWAVER	<---	GWAV	1.000			.598	
DESKTOP	<---	DEMF	1.000			.493	
ICONNECTION	<---	DEMF	1.685	2.088	.807	.704	.420
SMARTPHONE	<---	DEMF	1.818	2.248	.809	.84	.420
MSUBJECTS	<---	DEMF	-3.071	5.661	-.542	-.366	.590
SOCPRES_SS	<---	SSAT	1.000			.572	
LENVIR_SS	<---	SSAT	.854	.107	7.958	.650	***
SATIS_SS	<---	SSAT	1.131	.129	8.735	.816	***
SUBCA_TA	<---	TAPP	1.000			.897	
EXPCA_TA	<---	TAPP	.999	.055	18.246	.847	***
STUDCA_TA	<---	TAPP	1.032	.048	21.369	.981	***
PERCON_TA	<---	TAPP	1.017	.067	15.193	.946	***

Among the 15 sub-variables in the latent variable demographic profile, only four were found to have significant relationships to Student's performance in online music classes, the sub-variables of several music subjects enrolled (MSUBJECTS), Smartphone SMARTPHONE), Internet connection status (ICONNECTION), and Desktop (DESKTOP) accounted for the 7% in the variation of student performance.

The teaching approach (TAPP) is the last latent variable with the lowest negative beta weight of -.182. In a study by Isa, S. G. et al. (2020), they discovered that teaching methods have a significant impact on students' academic performance; their study revealed that discussion and demonstration teaching methods significantly improved students' academic performance when compared to the lecture method, which is passive, and teacher centered. In this present study however, teaching methods and student performance are inversely related. This could mean that considering that online teaching is new to them, the varying degree of teaching approaches that teachers may have been using in online classes, may have been poorly implemented considering the newness of the online mode, thus this affected their online performance negatively by 18%.

In summary, student performance in terms of grade weighted average (GWAVER) in online music class is affected by student satisfaction (53%) considering student satisfaction in music class, learning environment, and social presence. Only 7% of the demographics (number of music subjects enrolled, smartphone use, Internet connection, and desktop) impact student performance, while teaching approaches considering teacher's personal connection and engagement, student centered approach, expert-centered approach, and subject-centered approach) negatively

affect student performance with 18%.

Students, therefore, best perform in an online music class when they are satisfied with their music class itself, their learning environment, and social presence in an online music class.

CONCLUSIONS

The study sought to determine student performance in online music classes during the pandemic period and established factors that contributed to student performance in these classes. Moving music education from in-person to online comes with difficulties. From the result of the present study, there is a need to consider a new way of thinking about teaching music online, considering how teachers teach, how students should be satisfied first to learn, the technology used online, and the abilities of the students. It is possible to maximize the online music classes and get satisfactory student performance when they are contented in their music classes, with a satisfying and conducive online learning environment, and social presence. In online education, being satisfied with the experience is crucial for staying interested and involved in the learning process.

Students' creativity may have contributed to the minimal effect of the demographics defined by Internet use, smartphones, and other gadgets, even in the number of music subjects enrolled. These did not impact as much as the capability of teachers to handle the subject that negatively affected student performance in music online classes. It is paramount for music school administrators to review the manner of teaching approaches of the music instructors in an online mode. It's negative impact to student performance in online music classes as reported in this study, must be seriously addressed by the institutions involved in this present investigation.

Music schools may help teachers improve their online teaching methods and pedagogy by sending them to webinars and training sessions. Encouraging support through equipment/gadgets such as laptops, speakers, headphones, and other music-related equipment, may motivate teachers to enhance their teaching approaches.

Considering that only 60% of the identified predictors positively influenced student performance, future studies may identify other predictors of student performance in online music classes.

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