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Exploring the Satisfaction and Self-confidence of 3rd Year Medical Technology Students from Manila, Philippines regarding their Simulation Activities during the Enriched Virtual Mode of Delivery

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Abstract

The advent of the COVID-19 pandemic resulted in medical technology education transitioning from traditional face-to-face classes to online classes, which were delivered through online platforms and online laboratories. Along with these changes, the levels of confidence and satisfaction of students may have been affected. The former affects their willingness to participate while the latter keeps the students engaged in the continuous learning process. With this, the study aims to assess the satisfaction and self-confidence levels of 3rd-year medical technology students regarding the simulation activities utilized during the Enriched Virtual Mode of delivery. A survey questionnaire was used to gather the socio-demographic information and the levels of satisfaction and self-confidence of 293 medical technology students from the University of Santo Tomas in relation to their use of simulation activities during the Enriched Virtual Mode of delivery. The software IBM SPSS was used to analyze the data gathered statistically through descriptive statistics of mean and standard deviation, Spearman's rank correlation, the Mann-Whitney test, and the Kruskal-Wallis one-way analysis. Results exhibited that a strong positive correlation is observed between the satisfaction and self-confidence of the respondents regarding their simulation activities. However, the relationship between satisfaction regarding the simulation activities and the respondents' age and gender was weakly positive and negligible. There was also a negligible positive correlation between the socio-demographic variables and the satisfaction of the respondents, and a negligible negative correlation between the socio-demographic variables and the self-confidence of the respondents.

Keywords: COVID-19; Education; Enriched Virtual Mode; Satisfaction; Self-confidence

Introduction

Medical Technology or Medical Laboratory Sciences is a four-year program offered by higher education institutions in the Philippines. For the first three years of the program, the students take general education and professional courses to gain the necessary skills and knowledge to use in the field. An internship program takes up the students' last year, giving them opportunities to apply and hone the theoretical knowledge and practical skills they have acquired in the three years of learning in the program. Rotations in the different sections of a CHED-accredited laboratory would test what the students have developed (Commission on Higher Education [CHED], 2017). In this environment, the students can gain confidence in the skills they have obtained in the school setting while being exposed to the field under the care of experienced professionals.

In all forms of healthcare, diagnosis precedes any treatment, and accurate diagnosis assures proper disease management (Abiola and Oghome, 2011). Medical technologists, also known as medical or clinical laboratory scientists, play a massive role in the diagnosis of almost all diseases.

They are responsible for analyzing, testing, and assisting in the diagnosis of laboratory tests which directly influence the medical decision of physicians (Simon, 2017). In order to obtain accurate and reliable laboratory test results, medical technologists must develop and acquire the necessary clinical laboratory skills in performing different laboratory tests.

Coronavirus disease, or colloquially known as COVID-19, is a disease caused by a novel coronavirus known as SARS-CoV-2 (World Health Organization, 2020). Due to the spread of COVID-19, terms and procedures such as polymerase chain reaction or PCR are becoming known to the general public (Asif et al., 2021). However, due to the pandemic, students are becoming less equipped with the skills needed to perform these diagnostic procedures needed in the clinical setting and may pose a disadvantage to the healthcare system in the future (Ahmed et al., 2020).

During this pandemic, the education of future medical technologists has transitioned from having face-to-face lecture classes and hands-on learning via laboratory classes to now having it through online classes. Through the CHED Memorandum Order No. 4, Series of 2004, flexible learning has now been implemented to accommodate everyone due to the current differences in availability and knowledge on the use of technology, access to the internet, and the like (Gerio et al., 2021). With this, professors are preparing modules and pre-recorded videos for asynchronous classes while students are setting up study areas. Lectures are being delivered through platforms such as Zoom and Google Meet, while laboratory classes utilize online laboratories. With all of these changes being faced by the students, there is a possibility that their level of confidence has been affected.

Satisfaction of students in their learning is important because it keeps them participating in continuous education and engaged in the learning process. According to Wu et al. (2015), there is a correlation between learning satisfaction and continuing learning intention. Factors such as course contents, teaching methods, learning convenience and environment must all be considered in order to keep the students satisfied with their learning for better development of knowledge and skills. Aside from these factors priorly mentioned, the interaction between the professor and student, and student to fellow student is crucial in both the enriched virtual and the traditional face-to-face learning mode. Ultimately, as these students have their current online learning mode as their first, their online engagement is the deciding factor in their satisfaction, affecting their online learning outcome (Baber, 2020).

Self-confidence is an essential attribute for medical technology students because it influences the students' decision-making in the clinical setting. Lack of confidence may affect the students' ability to learn new information or handle challenging situations. Students who have self-confidence believe that they can succeed in their clinical goals (Lundberg, 2008). Confidence affects the students' participation and interests in the lesson as well as lessening their anxiety since they become more comfortable to share their own thoughts and opinions in class when they are confident (Akbari and Sahibdaza, 2020). They become goal-oriented and believe that they will be able to attain their expectations. In a study conducted by Moneva and Tribunalo (2020), it was discovered that students who have high self-confidence tend to have a higher level of performance and can easily accomplish their given tasks without hesitation, compared to their peers who have low self-confidence. Which is a necessary attribute to have in the clinical setting in order to accomplish the necessary tasks precisely and quickly to be able to aid in the diagnosis of the patient.

This study aims to assess and correlate the satisfaction and self-confidence levels of 3rd year medical technology students regarding the simulation activities utilized during the Enriched Virtual Mode of class delivery. This study was limited only to gathering the socio-demographic information, satisfaction, and self-confidence of the respondents from a private university in Manila Philip-

pines. The questions answered by the participants are only limited to those found in the adapted survey questionnaire tool.

The conduct of this study will help students gauge their level of satisfaction and confidence with the current curriculum. This then establishes which areas of the current curriculum require improvement, which can assist schools and the administration in making changes to their current approach and mode of delivery in order to provide quality education and ensure that students would obtain satisfaction with their learning and be confident enough to perform in the laboratory. Moreover, this study is beneficial for future researchers to understand the significant impact of the COVID-19 pandemic on the medical technology education system, in relation to the effect it has on the future of the healthcare system of the country.

Materials and Methods

The study used a quantitative descriptive design to describe a particular situation without altering any of the variables while still being able to identify certain factors that may have affected the said situation (Siedlecki, 2020). The topic of interest involved the satisfaction and self-confidence of medical technology students coming from a private university in Metro Manila during the Enriched Virtual Mode of delivery. It was quantitative and descriptive in nature, wherein the quantitative aspect focused on determining their satisfaction and self-confidence on learning, while the descriptive aspect aimed to describe the situation and determine the factors that could have possibly influenced it. The study utilized purposive sampling in selecting participants for the study. The sample size was calculated using the Taro Yamane formula, n=N/(1+Ne2), n being the sample size, N being the population size, and e being the margin of error. The population size (N) of the fourth-year medical technology students is 892, and the margin of error that was used for this study was 5%. Substituting the said values in the Taro Yamane formula, the calculated sample size was 277 participants. The researchers set inclusion criteria, wherein only respondents who met the following requirements were allowed to participate: (1) fourth-year Medical Technology students under the Faculty of Pharmacy of the University of Santo Tomas; (2) currently enrolled in A.Y. 2021-2022 and is under the curriculum effective A.Y. 2018-2019 (3) have undergone the Enriched Virtual Mode (EVM) in their third year and do not have any course deficiencies incurred from previous years; and, (4) 18 years old and above. The researchers excluded those who did not fall under the inclusion criteria, such as those below 18 years old, not under the curriculum effective A.Y. 2018-2019, and those who have incurred course deficiencies from the previous years. Participation in the study was voluntary and participants may withdraw from the study at any time by informing the researchers through e-mail correspondence.

In the process of gathering the necessary data to determine the impact of the enriched virtual mode of learning on the satisfaction and self-confidence level of the medical technology students, a survey was utilized to the qualified participants. The respondents were taken from the current fourth year Medical Technology students at the University of Santo Tomas. With the coordination of the researchers and respective fourth year medical technology class representatives, each fourth year medical technology student enrolled in Academic Year 2021-2022 received the Google Form link of the adapted survey questionnaire from the National League for Nursing (2004). The respective collective class consent was collected by the care of the class representatives. Afterwards, with the consent of the majority (50% + 1) of the class, the class representatives were then disseminated the Google Forms link of the adapted survey from the National League for Nursing (2004) to their particular class, as per the request of the researchers. With this, all fourth year Medical Technology students at the University of Santo Tomas received the Google Forms link of the survey via their class

representatives, and was made available for a month for them to accomplish the said survey in order to assess the student's perceived satisfaction and self-confidence level during their third-year of medical technology education (AY 2020-2021).

Collection of the informed consent was achieved in the aforementioned survey, as it was included and was placed before the survey questions itself. Afterwards, a set of questions assessed the students if they fit under the inclusion criteria. Only those who were eligible based on the inclusion criteria had the access to completely answer the questionnaire. The participants had the choice to have a copy of their responses sent to them in their emails.

There was a maximum of 892 responses from the fourth year students. However, a minimum of 277 responses was necessary as per the Taro Yamane formula, n=N/(1+Ne2), with N as 892 total of fourth-year medical technology students, and e as the 5% margin of error. The inclusion criteria in the questionnaire were the basis in determining whether the collected information was valid for the use of the study.

With the coordination of the class representatives, participants who had yet to finish the survey were followed up weekly. As the data was only used for academic purposes for this study, only the researchers and the statistician had access to the said collected data. However, the statistician only received the necessary extracted data without the basic identifiers in order to accomplish the data analysis. Furthermore, this data will be automatically deleted from the database five years after the completion of the study for publication purposes .Figure No. 1 summarizes the data collection procedure of the study.

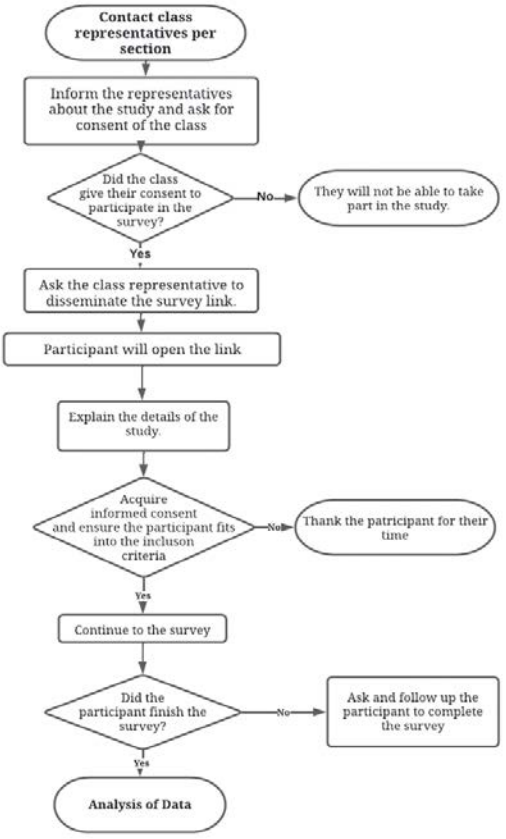

Figure 1. Schematic Diagram for Data Gathering and Analysis

After data collection, the gathered data from the survey questionnaire was analyzed using IBM SPSS statistical analysis software. Descriptive statistics including the mean or average score and the standard deviation or spread of the scores were used in order to summarize and visualize the responses of the participants. Frequency distribution was generated from the responses of the participants in order to measure the level of satisfaction and self-confidence. In assessing the relationship between satisfaction and self-confidence, the Spearman's rank correlation coefficient was used in order to determine the statistical dependence of the two aforementioned variables. However, in determining the relationship between satisfaction, self-confidence, and their socio-demographic characteristics, the Mann–Whitney test and Kruskal–Wallis one-way analysis of variance was utilized. Mann-Whitney test was used to assess the association of sex to the level of satisfaction and self-confidence, while the Kruskal-Wallis's test was employed to determine the relationship of age to the level of satisfaction and self-confidence. Furthermore, graphical representations such as graphs and charts were utilized for data visualization.

Results and Discussions

There were two hundred and ninety-three (293) respondents who participated voluntarily in the study. These were medical technology students enrolled in a private university in Manila, Philippines (CHED, 2017).

Based on Table 1, there were more female respondents as compared to male respondents by almost 30% of the sample size. The respondents were aged 18-23 years old (mean = 21.83, SD = 0.65). Due to the COVID-19 pandemic, learning has shifted from having face-to-face classes to having an Enriched Virtual Mode of class delivery (EVM) wherein students were being taught through online learning platforms. Due to the new learning environment, the study aimed to determine the satisfaction and self-confidence of the respondents regarding their simulation activities conducted under the EVM.

Table 1. Socio-demographic Characteristics of the Respondents

Characteristics		Mean (SD)	Frequency (%)
Age		21.83 (0.65)	
Gender	Female		190 (64.8)
	Male		103 (35.2)

Table 2 describes the frequency and percentage of respondents who were satisfied with their simulation activities during the EVM. The statements were ranked according to the highest number of satisfied respondents. As shown in Table 2, satisfaction with the current learning delivery depends on the strategies presented by the instructor to enhance learning during the pandemic, which is the Enriched Virtual Mode of delivery. In particular, 75.4% of the student respondents considered these strategies helpful in understanding the lesson. While 71.7% of them felt these teaching strategies were effective via the simulation activities, and 66.9% were satisfied with the Enriched Virtual mode of class delivery due to the variety of learning materials and activities they encountered.

62.1% were satisfied with the instructor's simulation utilization style as the respondents found it enjoyable. Meanwhile, 59.4% of the respondents found the utilized simulation for learning of their instructors suitable to their previous learning techniques. Additionally, almost half of the respondents found the simulation activities motivating and engaging, which aided them in furthering their theoretical understanding.

The data extracted from the satisfaction scale revealed that most students presented with a higher level of satisfaction with the teaching strategies provided by the instructor during the new learning type modality of Enriched Virtual Mode of delivery, exhibited by the percentage frequency of strongly agree or agree responses. On the other hand, a moderate to low level of satisfaction was observed in the students with the simulation learning activities provided by the instructor, as they found said activities helpful, enjoyable, motivating, and engaging.

75% of the 293 student-respondents felt that their instructors utilized simulation activities that aided their teaching style during the Enriched Virtual Mode of delivery. Simulation activities such as laboratory conferences and alike gives the respective instructor an opportunity to provide necessary suggestions and live feedback which may enhance the students' presentations (Hammerling, 2012). With this, the mentors are able to maximize their teaching methods despite the shift to Enriched Virtual Mode of delivery.

199 out of 293 student respondents agreed that the use of teaching methods in simulation activities during the Enriched Virtual Mode of class delivery was helpful and effective. There are various factors that keep the satisfaction of the student with their learning and one of which is the teaching method (Wu *et al.*, 2015) . Since the majority of the students agreed with the statement, the results actually support the claim of Wu in their study. In addition to that, appropriate teaching methods are necessary for the improvement of the knowledge and skills of students.

Among 293 respondents, 196 of them are satisfied that the Enriched Virtual Mode of delivery has provided different learning materials and activities which helped promote their learning in their curriculum. Since students have different learning styles, a variety of learning resources help students maintain their attention while also improving retention (Hamel, 2017). As students participate and explore different learning activities, higher engagement and motivation are established which improve self-learning practices, cognitive skills, as well as their learning satisfaction (Rajabalee & Santally, 2021). Activities during the Enriched Virtual Mode of delivery include case analysis, group presentations, and laboratory conferences. These activities encourage students to engage in online and social activities which help them gain confidence and improve their performance (Rajabalee and Santally, 2021).

Only 182 out of the 293 respondents showed satisfaction in regards to enjoying the use of simulation activities during the Enriched Virtual Mode of class delivery. Experiencing enjoyment when doing activities can affect the learning process of the students. Enjoying the activities being conducted can improve the students' learnings since it can help them retain more information (Hernik and Jaworska, 2018). Furthermore, they also mentioned that the greater the enjoyment of the student would also lead to a greater interest and satisfaction.

Out of the 293 respondents, 174 students agreed that the simulation activities implemented were suitable to the way they learn during the Enriched Virtual Mode of delivery. Student participants conveyed their agreement that integration of such activities in the teaching methods proved to be effective and appropriate for their learning styles (Oanh *et al.*, 2021). When compared to traditional learning methods, the use of simulation activities provides an appropriate learning environment for the students. Moreover, medical students expressed high satisfaction with simulation-based learning activities because such activities were designed to match their levels of skills and knowledge (Turatsinze *et al.*, 2020). With this, students rated the use of such activities as an excellent way of learning clinical skills and revealed their desire to continue learning under simulation teaching.

138 out of the 293 respondents or 47.1% of the respondents agreed that the simulation activities that were utilized were motivating and helped them to learn, indicating that 52.9% of the respondents found that the simulation activities used were not motivating and did not help them to learn. The lack of motivation of students during online learning may be accounted as one of the hurdles that college students face during this set-up is the lack of motivation toward their learning (Aguilera-Hermida, 2020). Motivation in learning was identified throughout different journals as a key factor in attaining success with a student's learning (Meşe & Sevilen, 2021). Motivation in online learning is a complex factor that was identified to stem off different individual traits and contexts (Hartnett *et al.,* 2011).

Table 2. Satisfaction of the 3rd Year Medical Technology Students with their Learning during the Enriched Virtual Mode of Delivery

Rank	Statement	Frequency (%) of choosing "agree or strongly agree"
1	My instructors used helpful simulation activities to teach during the Enriched Virtual Mode of delivery.	221 (75.4)
2	The teaching methods used in the simulation activities during the Enriched Virtual Mode of class delivery were helpful and effective.	199 (71.7)
3	The Enriched Virtual Mode of delivery provided me with a variety of learning materials and activities to promote my learning the curriculum.	196 (66.9)
4	I enjoyed how my instructor utilized simulation activities during the Enriched Virtual Mode of delivery.	182 (62.1)
5	The way my instructor(s) utilized simulation activities during the Enriched Virtual Mode of delivery was suitable to the way I learn.	174 (59.4)
6	The simulation activities used in the Enriched Virtual Mode of delivery were motivating and helped me to learn.	138 (47.1)

Table 3 shows the results regarding the self-confidence of the 3rd-year medical technology students towards their learning during the enriched virtual mode of delivery. Statements are arranged according to the highest number of confident respondents.

As observed in Table 3, 94.2% of the total sample size recognized their responsibility of knowing things from the simulation which boosts their confidence in self-learning. In addition, at least 80% of them acknowledge knowing either how to get help when not understanding the concepts covered during the simulation activity or how to use simulation activities to learn critical aspects of practice skills during this current learning modality. Moreover, 56% of the respondents are confident in the simulation activities that cover critical content necessary for the mastery of the curriculum while only 42% are confident in mastering the content of the presented simulation activity. Lastly, only 35%, which is approximately one for every three medical technological student-respondents is confident in the skills developed and knowledge obtained from the simulation activities on performing necessary tasks in a clinical setting. Overall, the data obtained from the self-satisfaction scale revealed a higher level of self-confidence in terms of acknowledging responsibility

and self-worth in understanding simulation activities during the enhanced virtual mode of delivery. Whereas a lower level of self-confidence has been observed in terms of the developed skills and mastery of the presented simulation activities.

Most of the participants, 94% out of the 293 student respondents, felt that it is their responsibility to identify and understand the necessary information from their encountered simulation activities during the Enriched Virtual Mode of delivery. As this Enriched Virtual Mode of delivery is part of the four years minimum medical technology program, which also includes a twelve-month satisfactory internship in accredited laboratories, stated in Section 6 of RA 5527. Additionally, Espinosa et al. (2019) has accomplished a study which reveals the correlation between increased self-confidence and better management in regard to their negative emotions, resulting in high-quality service being provided to the patient. With this, the students recognize the need to learn the information from the simulation activities during the Enriched Virtual Mode of delivery in order to provide quality service to the patient via increased self-confidence.

Based on the results, 243 students out of 293, making it almost 83% agreed that they know how to get help to understand unclear concepts covered during the simulation activities during the Enriched Virtual Mode of delivery. A study conducted by Akbari and Sahibzada (2020) showed that the majority of students that seek help to clarify concepts they do not understand have high levels of self-confidence. In addition, students with high self-confidence have an increased interest in goal-seeking, experience improved participation, enjoy learning more, and grow in comfort with their lecturers and classmates.

Among 293 respondents, 242 of them know how to use simulation activities in order to learn critical aspects for skills development. In a study conducted by Chang et al. (2014), students who have higher computer self-efficacy have greater confidence in online learning compared to those who have low computer self-efficacy. This indicates that students who are able to use simulation activities and navigate the online platform are more confident towards their learning (Landrum, 2020). Furthermore, according to Palmer and Holt (2010), the components of an online learning system that students value the most are accessing course information, engaging with online resources, participating in online discussion, and contacting lecturers thus students who are able to perform these components of the online platform are more confident and have an enhanced learning experience.

Out of the 293 respondents, 164 agreed that the simulation activities were able to cover the content needed for them to master the curriculum. Being able to cover all the content allows the students to master the curriculum since this enables them to gain the needed knowledge and understanding thus leading them to build up their self-confidence. A study conducted by Shaughnessy et al. (2012) discussed that mastery of the curriculum improves the knowledge, skills, and confidence of the learners. Furthermore, students would be able to understand and apply the information to their practice when all the contents in the curriculum are covered.

Only 122 respondents out of the total 293 expressed their agreement that they are mastering the simulation activity presented to them during the Enriched Virtual Mode of Delivery. The response of the majority of the students can be attributed to the limitations of the implemented simulation activities. In a study conducted by Koukourikos et al. (2021), it was stated that although there is widespread use of simulation in education, there are certain limitations regarding the use of such methods. While simulation activities imitate real life situations, imperfect imitations would always be present. Not all variables of an event would be present in a simulation, therefore the students would not be able to master all aspects that could occur in an actual event where a patient needs attention.

Lastly, 102 out of the 293 respondents, or 34.8% felt that they were confident in developing their skills and knowledge from the simulation activities during the Enriched virtual mode of delivery. The lack of confidence in skills of majority of these students may be explained by the sudden transition to the online set-up which may bring about uncontrollable factors such as ease of use of simulation software, accessibility, and self-efficacy. (Aguilera-Hermida, 2020)

Table 3. Self-Confidence of the 3rd year medical technology students with their learning during the Enriched Virtual Mode of Delivery

Rank	Statement	Frequency (%) of the choosing "agree or strongly agree"
1	It is my responsibility as the student to learn what I need to know from this simulation activity during the Enriched Virtual Mode of delivery.	276 (94.2)
2	I know how to get help when I do not understand the concepts covered during the simulation activities during the Enriched Virtual Mode of delivery	243 (82.9)
3	I know how to use simulation activities to learn critical aspects of these skills during the enriched virtual mode of delivery	242 (82.3)
4	I am confident that the simulation activities during the Enriched Virtual Mode of delivery covered critical content necessary for the mastery of the curriculum	164 (56.0)
5	I am confident that I am mastering the content of the simulation activity that my instructors presented to me.	122 (41.6)
6	I am confident that I am developing the skills and obtaining the required knowledge from the simulation activities during the Enriched Virtual Mode of delivery to perform necessary tasks in a clinical setting.	102 (34.8)

After measuring the satisfaction and self-confidence of the respondents towards simulation activities learning during EVM, the study aimed to assess whether or not a significant relationship between the aforementioned variables exists. Table 4 indicates the association between satisfaction and self-confidence of the respondents.

As delineated from Table 4, a strong positive correlation exists between satisfaction and self-confidence of the respondents towards their learning from their simulation activities during the Enriched Virtual Mode of delivery ($\rho=0.713, p<0.001$). This signifies that respondents who are highly satisfied with regards to the simulation activities have higher self-confidence in learning the necessary concepts needed in their field. This is further supported by a study conducted by Landrum (2020) wherein it was discussed that the student's confidence in their ability to learn can be used as an indicator that they were satisfied with their learning during online classes. In a study conducted by Alsalamah (2020), students who were satisfied with the materials, learning methods, and activities included during their internship experience using high-fidelity simulation labs also displayed self-confidence in learning. Furthermore, the simulation labs were also beneficial in demonstrating the knowledge and experience of students in a clinical scenario. The results of the study by Winum

(2017) revealed that there is also an increase in satisfaction and self-confidence of learners who have experienced simulation-based learning.

With simulation activities being commonly used as a tool for teaching during online classes, it is important that students are satisfied with the simulation activities as it helps them gain confidence in their own skills and abilities, which can greatly influence how they perform as future professionals in the medical field especially when interacting with patients and fellow healthcare professionals and when using their clinical skills and knowledge (Crowe *et al.*, 2018).

Table 4. Correlation Between Satisfaction and Self-Confidence Towards Simulation Activities Learning

		Self-Confidence
Satisfaction	Spearman rho	0.713***
	95% CI	[0.652, 0.779]

*Correlation is significant: *p < 0.05, **p < 0.01, ***p < 0.001*

Table 5 presents the correlation between the socio-demographic characteristics of the participants and their satisfaction towards the use of simulation activities utilized during the Enriched Virtual Mode.

Based on the results presented in Table 5, it can be observed that there is a weak positive and insignificant association between the age of the participants and their satisfaction (p = 0.005, p = 0.926) and between the satisfaction of the students and their gender (p = 0.105, p = 0.074). There is no significant age difference in the population of the respondents since all the participants are fourth year students at present. Thus, it can be inferred that the level of satisfaction of the students towards the use of simulation activities is moderate and homogenous. In relation to gender, although the majority of the participants are females their levels of satisfaction are similar to that of the male respondents.

The collected data correlates with previous research of both sex, male and female, having comparable perceived abilities in digital learning. Additionally, there was no difference in the management of digital education, utilization of technologies and technical equipment when accomplishing their academic requirements, and the comprehension of the tasks from online learning between sex (Korlat *et al.*, 2021). With these, the results can deduce that gender, at most, minutely affects the satisfaction towards simulation activities learning.

Table 5. Correlation between Socio-demographic Characteristics and Satisfaction towards Simulation Activities Learning (N = 293)

		Age (Spearman Rho)	**Gender (Rank Biserial Coefficient)**
Satisfaction	Correlation Coefficient	0.005	0.105
	95% CI	[-0.109,0.119]	[-0.009,0.085]

*Correlation is significant: *p < 0.05, **p < 0.01, ***p < 0.001*

Table 6 represents the correlation between the socio-demographic characteristics of the students and their self-confidence towards the simulation activities during the Enriched Virtual Mode of delivery.

Based on the analysis of the correlation between the socio-demographic characteristics of the students and their self-confidence towards the simulation activities used during the Enriched Virtual

Mode, it appears that in general, the age and gender of the students have no effects on their self-confidence when using simulation activities. However, it is noted that there is a negative correlation between the age of the respondents and their self-confidence, implying that the present generation are more confident in terms of using these kinds of activities in their learning process. The new generation of learners prefer the use of technology in their learning process, along with active learning and experiential activities instead of traditional methods (Vizcay-Moreno and Pérez-Cañaveras, 2020). Following this, it was discovered that the students felt confident in using these methods to further their understanding and assess whether they have progressed.

Table 6. Correlation between Socio-demographic Characteristics and Self-Confidence towards Simulation Activities Learning (N = 293)

		Age (Spearman Rho)	**Gender (Rank Bi-serial Coefficient)**
Self-Confidence	Correlation Coefficient	-0.063	0.085
	95% CI	[-0.176,0.051]	[-0.029,0.197]

*Correlation is significant: *p < 0.05, **p < 0.01, ***p < 0.001*

Conclusion

The importance of simulation activities has been highlighted during the COVID-19 pandemic as they provide learners and educators with a virtual environment that promotes learning of necessary skills while ensuring safety. The results of this study showed that the majority of the students were satisfied with the simulation activities during the Enriched Virtual Mode of delivery as they were helpful and effective. Most of the students are also confident that the simulation activities covered necessary content in the curriculum. Moreover, the study findings also revealed that there is a strong correlation between satisfaction and self-confidence of third year medical technology students to the simulation activities during the Enriched Virtual Mode of delivery. Highly satisfied students were shown to increase their self-confidence in learning concepts through simulation activities. Various factors have been shown to affect both the satisfaction and self-confidence of the students which in turn would cause an improvement in academic performance (Dhaqane and Afrah, 2016). These factors include course contents, teaching methods, learning convenience, and environment. Aside from these, the interaction between the students and teachers during EVM is crucial in establishing the satisfaction and self-confidence of students in learning. The findings of this study suggest that the quality of the simulation activities and EVM should be improved by considering the satisfaction of students. This would promote improved response of students to the academic curriculum while also increasing their self-confidence in learning thus allowing them to develop necessary skills and better performance as future allied health professionals.

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