Factors Affecting Students' Happiness on Online Learning during the COVID-19 Pandemic: A Self Determination Theory Approach

Ardvin Kester S. Ong, Yogi Tri Prasetyo, Mark Kenneth C. Paruli, Trixie M. Alejandro, Angela S. Parais, and Leo Matthew B. Sarne

Abstract—Happiness is a debatable abstract concept as it is a term without any exact or precise way of measurement and evaluation and the current COVID-19 pandemic has affected the students with their happiness leading to a decrease in learning. The present study aimed to determine the factors that affect the students' happiness during online learning brought by the COVID-19 pandemic. 622 senior high school students who underwent online learning were given a questionnaire composed of 45 questions grouped into 10 factors under autonomy, competence, and relatedness that were based on the self-determination theory. Structural Equation Modeling (SEM) was utilized in this research to determine the causal relationships between latent variables construct. SEM showed that autonomy was the most significant factor to students' happiness because students can cope with the current COVID-19 pandemic. The second variable was relatedness because continuous communication and support are evident among respondents. Lastly, competence was found to be a negative predictor because students are knowledgeable when it comes to the current state of the COVID-19 pandemic. As the first study that utilized the self-determination theory approach in the happiness context during the COVID-19 pandemic, the study can provide areas for better innovation in online learning given that there is no definite timeline for this pandemic. Moreover, the education sector may take into consideration students' autonomy and relatedness to help increase happiness leading to satisfaction and continue online learning despite the COVID-19 pandemic.

Index Terms—Happiness, online learning, pandemic, senior high school, COVID-19.

I. INTRODUCTION

The World Health Organization (2020) declared the COVID-19 as a pandemic in during March 2020 forcing the suspension of establishments, some closed [1]. Among the suspension were schools and universities to protect students from the virus spread. The suspension of schools and universities highly affected the education system, forcing students to shift from traditional face-to-face learning to fully online [2]. Online learning changed the students' attitudes, motivation, understanding, and even added worry [2]. This is because students lacked social interaction leading students to feel anxious and unhappy with the current learning set-up. Moreover, this led to a decrease in students' appreciation and mental health well-being [3], [4].

The high level of behavioral changes added a psychological burden and led students to be unhappy [5]. With the psychological burden, sixty (60) percent of students said that the pandemic had brought them more emotional and financial stress [6]. The study of Redden (2020) also found that the current unhappy condition and the mental health of the students negatively affected their academic performance [6]. Terada (2020) stated that though some students are equipped with resources to continue, not everyone has the same opportunity [7]. Terada (2020) added that universities are not accommodating those who are not able seeing that learning decreased about 44% in reading and 66% lose in mathematics [7]. Moreover, Kuhfeld (2020) stated that access to technology would play a crucial role to equalize learning across all aspects [8]. This would add stress and unhappy feeling towards students and would lead to a decrease in their well-being.

The well-being of students is one of the most important factors to consider at this time. Yoo and Kim (2019) studied the relationship between students' overall perception of the educational environment and their subjective happiness [9]. The results showed that the students' overall perception was more positive for the educational environment, while there was no difference in the subjective perception of happiness found between phases. However, their study was not conducted during the COVID-19 pandemic. Badri et al. (2018) discussed the happiness of students about their social relationships at school and at home [10]. However, there is now the problem of separation of school, social interaction, and psychological aspects that plays a big role in students' learning [2]. Yang (2020) identified the factors that worsen and protects happiness or emotional well-being during the COVID-19 pandemic [11]. The factors were the fear of contracting the disease, extent of potential harm, and relational concerns.

Despite the availability of several studies regarding happiness in different aspects in other countries, there is a lack of academic research addressing students' happiness in online learning. Prior research has focused on happiness across different factors such as age, gender and religion, wealth, children and parenting styles, persons with disabilities, and education [12]-[17]. On the other hand, there were few articles about how happiness can be affected when

there is a crisis [11]. However, factors affecting students' happiness on online learning during a pandemic were rarely discussed. This topic plays an essential role since it can provide information in increasing the happiness of students. This may lead to a positive output towards learning and eventually lead to satisfactory academic achievement. Therefore, it is necessary to measure student's happiness on online learning during the COVID-19 pandemic.

The objective of this study was to analyze the factors that affect students' happiness among Senior High School students on online learning during the COVID-19 pandemic. This study utilized the Self-Determination Theory (SDT) with the three main factors: autonomy, competence, and relatedness. The result of this study can provide areas for better innovation in online learning given that there is no definite timeline for the pandemic. Moreover, this study can provide universities with factors for consideration in offering fully online learning that students may be happy with even after the pandemic. Therefore, universities may also use the result as a way to promote or use this as marketing strategy.
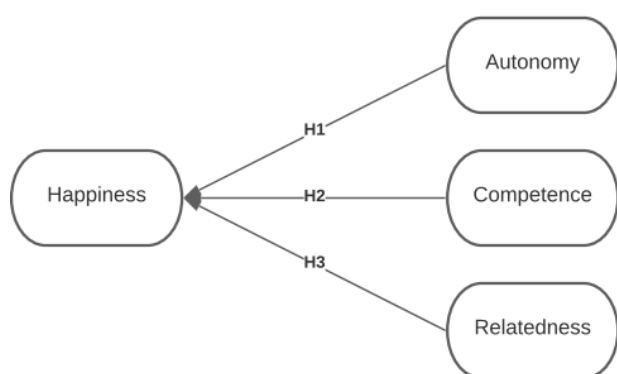
II. THEORETICAL RESEARCH FRAMEWORK

Fig. 1. Theoretical research framework.

Fig. 1 represents the Theoretical Research Framework of the current study. Structural Equation Modeling was utilized to obtain the relationships between the latent variables [18]. The goal was to assess the factors affecting students' happiness on online learning among Senior High School students during the general community quarantine (GCQ) of the COVID-19 pandemic. The framework was based on the self-determination theory.

Self-determination theory (SDT) is a general theory of human personality and motivation that is concerned with how the individual interacts with the social environment and relies on it [19]. SDT discusses the three basic, intrinsic, and psychological needs. Legault (2017) discussed that all individuals strive for and need autonomy (the need to feel free and self-directed), competence (the need to feel efficient), and relatedness (the need to communicate closely with others) in order to thrive and develop [19]. Thus, the following hypotheses were proposed:

H1. Autonomy had a significant direct effect on happiness.

H2. Competence had a significant direct effect on happiness.

H3. Relatedness had a significant direct effect on happiness.

A. Autonomy

The study considers different measurements under autonomy: (1) Quality of Education, (2) Coping Ability, (3) Class Schedule, (4) Separation of Home and Academic Tasks, (5) School Workload, and (6) Internet Quality.

Quality of Education is vital to autonomy as students have the need to learn all that they can as early as they are able to. Verspoor (1989) stated that there was a growth of children enrolled in developing countries throughout the world [20]. Therefore, providing students with access to education is said to be the main goal of the educational sectors across the world. Unfavorable economic catastrophes such as this pandemic may result in scarcity of resources which further jeopardize the ability of developing countries to provide quality education to their students, most especially in state-run academic facilities.

Coping Ability of the respondents were taken into consideration as the pandemic has brought several problems that only the respondents may know how to deal with. With recent reports of students taking their lives because of problems, this factor will be able to determine the extent of what they can deal with before asking for professional help [21]. Dunkel-Schetter and Lobel (1990) stated that students experience high levels of stress in the domains of friendships, romantic relationships, family relationships, financial affairs, and academic work [22].

Class Schedules may differ from countries and school to school. Building a complete schedule for a whole institution is work that requires a lot of attention and manpower. This is because considering factors such as instructor's schedules, student's classes, abilities, and much more need time to be accomplished. Alvarez-Valdes et al. (2001) has proposed a solution to the problem of creating schedules, but a concern is that different countries have different timetables and abilities of students [23]. Another note is that time is of the essence during this pandemic, with the added factor of internet traffic, platform availability, and network availability of all students.

Separation of Home and Academic tasks helps students balance their responsibilities at home and at school. The overlap of these two may lead to unfinished tasks as the respondent may not know which among these should be prioritized given that both are equally important. Not being able to do these may garner them a consequence either from school or those with them at home. In an article by Hishon (2020), working at home is the new normal and has become a challenge to a lot of people. This is because there has been a thin line create in the separation of work and home. In addition, Hishon (2020) added that there should be an emphasis given to the importance of being able to separate tasks at home and school.

School Workload may vary depending on the type of school, academic level, grade level, and many other factors on both the institution and students' end. A student's workload is defined as the content, difficulty, and number or weight of tasks needed to be accomplished within a certain time frame. A heavy workload may lead to students being unable to rest as they need to spend more time doing these tasks. During this pandemic, the workload of some students

was adjusted according to what the institution sees fit, given that all interactions are conducted online.

Internet Quality is one of the biggest factors to consider during online learning [24]. Taking the Philippines as an example, a country that utilizes online learning with poor internet quality. Hallare (2020) stated that the Philippines is ranked 110th out of 139 countries in terms of mobile data speed with an average of 18.49 megabits per second (mbps) [24]. The Philippines is also ranked 103rd out of 176 countries for fixed broadband speed with an average of 28.69 mbps. Students experience data lagging and disconnection in their classes adding to the burden brought by the pandemic. If online learning needs to continue further, the internet quality and access of students will be a vital factor.

B. Competence

Knowledge regarding the Pandemic helps the respondents and the public gain greater awareness thus, reducing fear of the spread of the disease. Johnson and Hariharan (2017) took note of the knowledge, attitude, and behavior of the general public during the A-H1N1 Influenza pandemic [25]. The same situation may closely be applied to today's COVID-19 pandemic.

C. Relatedness

Relationship to Parents is seen as a great factor that affects the respondent's happiness since parents are those who impact on the student the most. As the general community quarantine continues, parents and children spend longer time together. Therefore, giving space to be able to talk and communicate is essential. Parents can shape the behavior and happiness of their children depending on how they respond to negative emotions shown by children.

Relationships to Peers, better known as friendships, provide a safe space for children to openly express emotions without worrying how they will be treated at home. Miller-Slough and Dunsmore (2020) stated that friendship evolves during the adolescent stage [26]. The desirable source of emotional support and influence among friends can be positioned alongside parents to build a better relationship.

III. METHODOLOGY

A. Participants

The current study utilized convenience sampling due to the lockdown of the COVID-19 pandemic. An online survey was utilized, distributed through social media to assess online learning happiness during the COVID-19 pandemic among senior high school students [27], [28]. During the academic year 2020-2021, a convenience sampling of 622 senior high school students from different schools was considered. The voluntary responses of 199 male students and 423 female students were included for data analysis. Table I shows the descriptive statistics of the respondents.

TABLE I: DESCRIPTIVE STATISTICS OF THE RESPONDENTS ($N = 622$)

Characteristics	Category	N	%
Sex	Male	199	32
	Female	423	68
Age	15	7	1.125
	16	123	19.77
	17	308	49.52
	18	174	27.97
	19	10	1.608
Type of School	Public	43	6.9
	Semi-private	15	2.4
	Private	564	90.7
Grade Level	11	192	30.9
	12	430	69.1
Senior High School Strand	STEM	361	58
	ABM	125	20.1
	HUMSS	88	14.1
	Health Allied	13	2.1
	GAS	14	2.3
	Other	21	3.4

B. *Questionnaire*

In accordance with our theoretical research framework, a self-administered questionnaire was drafted for this study to evaluate the factors affecting students' happiness on online learning during the GCQ of COVID-19 pandemic (Table II). The questionnaire consisted of 11 sections: (1) Demographic Information (gender, age, type of school, type of school, grade level, and strand), (2) Quality of Education, (3) School Workload, (4) Class Schedule, (5) Knowledge regarding the Pandemic, (6) Separation of Home and Academic Tasks, (7) Internet Quality, (8) Coping Ability, (9) Relationship of Parents, (10) Relationship to Peers, and (11) Happiness.

C. *Structural Equation Modeling*

This study utilized Structural Equation Modeling (SEM) to explore the causal relationships between factors affecting the students' happiness on online learning among Senior High School students during the general community quarantine of the COVID-19 pandemic. SEM, also known as path analysis, is a multivariate method used to test hypotheses regarding the influences among the interacting variables [18]. It is effective in dealing with the lack of measurement errors and issues that self-report data may give [29].

IV. RESULTS

A revised SEM was constructed to enhance the model fit [30]. Fig. 2 represents the final SEM showing that Autonomy is the highest significant variable followed by relatedness and Competence. Table II presents the descriptive statistics result for every indicator. Hair (2010) suggested that the initial indicators with values less than 0.500 could be removed to enhance the model fit [30].
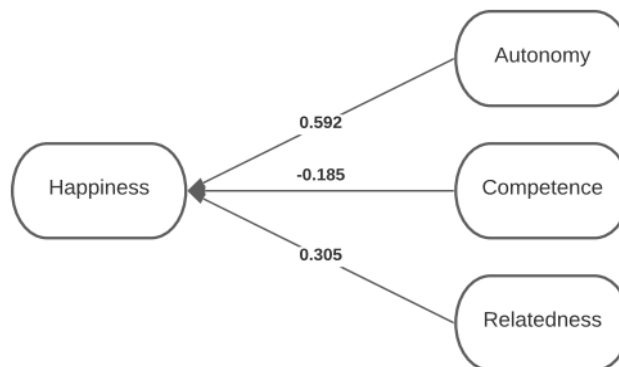

Fig. 2. Final SEM for assessing the factors affecting the students' happiness on online learning during general community quarantine of the COVID-19 pandemic.

TABLE II: INDICATORS AND DESCRIPTIVE STATISTICS RESULT

Variables	Construct	Items	Measures	Factor Loading	
				Initial	Final
Autonomy	Quality of Education	QE1	I am able to understand discussions given to us.	0.536	0.530
		QE2	I am able to pick-up or learn something new from my lessons.	0.508	0.505
		QE3	I pass requirements for the sake of learning and not just complying.	0.414	-
		QE4	I enjoy online classes.	0.517	0.506
		QE5	I see that my teachers put effort into teaching us	0.275	-
	Class Schedule	CS1	I see that the class schedule given to me is favorable and matches my routine.	0.593	0.626
		CS2	I get enough rest between classes.	0.551	0.581
		CS3	I am able to comply with all attendance matters.	0.501	0.523
		CS4	I have free time after finishing attending all my classes each day.	0.572	0.596
	Separation of Home and Academic Tasks	SH1	I am able to do school tasks without being bothered by household chores.	0.582	0.577
		SH2	I am able to do my assigned chores at home.	0.556	0.565
		SH3	I do not require help in accomplishing tasks given to me.	0.474	-
		SH4	I am able to maintain a fixed schedule for all my tasks.	0.608	0.612

Variables	Construct	Items	Measures	Factor Loading	
				Initial	Final
	Internet Quality	IQ1	I do not experience internet interruption during classes.	0.470	-
		IQ2	I find that my internet speed is enough for online classes and other needs.	0.491	-
		IQ3	I submit schoolwork on time without interruptions from my internet connectivity.	0.534	-
		IQ4	I am able to play video games without lag with my current internet quality.	0.479	-
	Coping Ability	CA1	I have ways to cope when having problems.	0.599	0.613
		CA2	I have hobbies that I use as a coping mechanism.	0.505	0.517
		CA3	I have not needed emotional support during times of this quarantine.	0.357	-
		CA4	I have not had a breakdown.	0.378	-
Competence	Knowledge regarding the pandemic	KP1	I am well updated about the happenings around me.	0.709	0.694
		KP2	I am willing to attend seminars in order to learn more regarding the pandemic.	0.653	0.650
		KP3	I read articles and publications about the pandemic.	0.768	0.817
		KP4	I help disseminate proper information to others.	0.711	0.729
	School Workload	SW1	I finish all my tasks without having the need for an extension of deadlines.	0.248	-
		SW2	The weekly workload given to me is accomplishable.	0.230	-
		SW3	I do not procrastinate.	0.124	-
		SW4	I do not let my work pile up too much.	0.235	-
Relatedness	Relationship of Parents	PA1	I am comfortable living with my parents or guardian.	0.744	0.758
		PA2	I think that my parents have a good relationship.	0.643	0.667
		PA3	I look up to my parents when it comes to personal matters.	0.628	0.680
		PA4	I find that my parents easily understand my concerns.	0.661	0.722
	Relationship to Peers	PE1	I maintain a good relationship with people around me at home.	0.771	0.750
		PE2	I can approach those around me at home when I have concerns.	0.718	0.747
		PE3	I find fun around those who surround	0.724	0.735

Variables	Construct	Items	Measures	Factor Loading	
				Initial	**Final**
			me at home.		
		PE4	I rely my happiness to those around me.	0.471	-
	Social Media Usage	SMU1	I use social media in order to get updates for my classes.	0.408	-
		SMU2	I use social media frequently.	0.313	-
		SMU3	I use social media as a form of resting.	0.298	-
		SMU4	I do not need to take breaks away from social media in order to detoxicate.	0.148	-
	Enjoyment with Friends	EF1	I have planned trips or gathering with friends for after this quarantine.	0.387	-
		EF2	I continue to talk to my friends through online platforms during this quarantine.	0.488	-
		EF3	I can easily open up to my friends whenever I have concerns.	0.451	-
		EF4	I consider talking to my friends as a form of enjoyment.	0.461	-
	Happiness	H1	I feel that my hardwork in studying is very rewarding.	0.534	0.505
		H2	I am happy with how our school manages distance learning.	0.513	0.509
		H3	I am happy with how I am able to talk to my friends during this quarantine.	0.482	-
		H4	I am happy with the COVID-19 response in our country.	0.211	-
		H5	I appreciate more the people, events and situations that are part of my life.	0.494	-
		H6	I am able to find satisfaction in what I have around me.	0.682	0.658
		H7	I am particularly pleased with my situation now.	0.600	0.635
		H8	In general, I consider myself happy.	0.752	0.779

Table III represents the composite reliability of the final factors considered in this study. It could be seen that the values are greater than 0.700 for both the Cronbach's alpha and the Composite Reliability. This indicates that the model has internal consistency and constructs are reliable [30], [31].

TABLE III: COMPOSITE RELIABILITY

Latent Variables	Items	Cronbach's α	Factor Loadings	Average Variance Extracted (AVE)	Composite Reliability (CR)
Relatedness (R)	R1	0.882	0.758	0.523	0.885
	R2		0.667		
	R3		0.680		
	R4		0.722		
	R5		0.750		
	R6		0.747		
	R7		0.735		
Happiness (H)	H1	0.751	0.505	0.391	0.758
	H2		0.509		

Latent Variables	Items	Cronbach's α	Factor Loadings	Average Variance Extracted (AVE)	Composite Reliability (CR)
	H6		0.658		
	H7		0.635		
	H8		0.779		
Competence (KP)	KP1		0.694		
	KP2	0.811	0.650	0.526	0.815
	KP3		0.817		
	KP4		0.729		
Autonomy (A)	A1		0.530		
	A2		0.505		
	A3		0.506		
	A4		0.626		
	A5	0.830	0.581	0.318	0.848
	A6		0.523		
	A7		0.596		
	A8		0.577		
	A9		0.565		
	A10		0.612		
	A11		0.613		
	A12		0.517		

Moreover, Table IV presents the IFI, TLI, CFI, GFI, AGFI, and RMSEA values according to Gefen *et al.* (2020) and Steiger (2007) [32], [33]. The result showed reliability and a good fit with values being greater than 0.800 and RMSEA with values less than 0.07 [32], [33].

TABLE IV: MODEL FIT [4], [30], [32]

Goodness of fit measures of the SEM	Parameter Estimates	Minimum cut-off
Goodness of Fit Index (GFI)	0.915	> 0.80
Adjusted Goodness of Fit Index (AGFI)	0.891	> 0.80
Root Mean Square Error of Approximation (RMSEA)	0.046	< 0.07
Incremental Fit Index (IFI)	0.935	> 0.90
Tucker Lewis Index (TLI)	0.921	> 0.90
Comparative Fit Index (CFI)	0.934	> 0.90

V. DISCUSSIONS

From the results, Autonomy was found to have the highest direct significant effect on students' happiness on online learning during the COVID19 pandemic (β: 0.592; p = 0.032). Coping Ability, Separation of Home and Academic Tasks, Class Schedule, and School Workload were factors considered. These four underlying factors gave information about the happiness the students received about school-related tasks. From the final model, it was seen that students are able to cope when problems occur. Students are able to finish the task without asking for the extension of deadlines, able to accomplish all tasks given throughout the week. Moreover, students are also able to work without any distractions at home and at the same time finish household chores. Lastly, it was seen that students were able to fix their own pace and schedule for all the tasks given. The results are supported by Dunkel-Schetter and Lobel (1990) wherein they stated that students experience high levels of stress especially under the domain of academic work and having ways to cope up is a key to their better being [22].

However, Bezuidenhout (2015) stated that there is a significant implication to changing roles and resulting workloads for the students' well-being and mental health, especially in academics [34]. Hussein (2020) stated that the line between work and home is currently very thin that it is difficult to distinguish the difference [35]. As students try to balance doing their tasks at home and school, a heavy combined workload of these may lead to neglect of one of the responsibilities at hand. Therefore, autonomy would play a crucial role when students will struggle when pressure between household and academic chores increases.

Interestingly, Competence was seen to be a negative predictor of student's happiness on online learning during the COVID19 pandemic (β: -0.185; p = 0.018). As students gain more knowledge on the status and cases of COVID19, it tends to lessen the level of their happiness as worry and fear step in. It was seen that students who are updated with the happenings of the COVID-19 pandemic are willing to learn more by reading about the current pandemic. Moreover, students tend to share information with regards to the COVID-19 pandemic to help raise awareness. Johnson and Hariharan (2017) supports the findings, emphasizing that organizations and social media companies prioritize news and happenings regarding the COVID19 pandemic [25]. This leads to information uptake of students with the current scenario. Therefore, the increased knowledge of the current COVID-19 leads to worry and unhappiness.

This result may affect the academic performance of students. According to Esani (2020), the current state of students is highly effective toward learning due to stress, anxiety, and unhappiness [2], [11]. Students' satisfaction with their learning and academic status is a vital role as it affects their education. This may lead to a decrease in their satisfaction, feel unhappy, and may affect their academic status [36], [37].

Relatedness has a direct significant effect on students' happiness on online learning during the COVID19 pandemic (β: 0.305; p = 0.008). The relationship with parents and peers affect the happiness of students as they tend to spend most of their time during quarantine with their parents and families, meanwhile, friends are able to connect with each other forming a support group for problems that may not be discussed openly with parents and family.

It was seen from the indicators that the respondents have a great relationship with their parents. There is constant communication and understanding. The students are also found to be comfortable staying in their homes. Moreover, it was seen that students have control over their own happiness while maintaining good communication with friends. They also rely on their happiness to the people around them. Miller-Slough and Dunsmore (2020) stated that the

adolescent stage is when friendship and relationships evolve [26]. The emotional support of friends and family is developed during this stage and would be a factor for the children's happiness. Given the COVID-19 pandemic, socialization has been considered as a challenge. Therefore, it would be advisable that constant relationship building through support and communication is a key to happiness.

Overall, the results showed that if students maintain social interaction even online, the satisfaction and feeling of happiness would be present. However, if students would not be able to express themselves and communicate effectively, this would lead them to feel unhappy. Since the respondents can maintain substantial internet during online classes, this will not cause any disruption. However, if technology would not be available, students will not be able to catch up with those who are continually advancing with education as schools are not accommodating those who are not able [7]. The understanding of COVID-19 pandemic also plays a crucial role in student's happiness. The more students would understand the situation, the more they can adapt to the current state and system of education.

A. Theoretical Contributions

Self-determination theory (SDT) covers human personality and motivation that is concerned with how individuals interact with the social environment and rely on it. Though not many studies utilized the Self-determination theory for measuring happiness, this theory was used to assess the students' happiness on online learning among Senior High School students during the general community quarantine of the COVID-19 pandemic. The theory was utilized structural equation modeling to explore the causal relationships among the variables autonomy (A), competence (C), relatedness (R), and happiness (H). Moreover, this is the first study exploring human happiness during the COVID-19 that is in line with the online learning platform applied to students. From the results of this study, it was seen that autonomy and relatedness played an important role in happiness. This could be applied in other studies as a reference to measuring happiness.

B. Practical Implications

In this study, there were more participants that are positive about the online learning during the general community quarantine of the COVID-19 pandemic. The findings of this study implied that the factors Autonomy and Relatedness had a significant effect on happiness. Even so, students need assistance and guidance from their family, friends, and their universities as the COVID-19 pandemic is still present. The reason why Competence was found to be significant is that the news about the COVID-19 pandemic is available online such as advertisements, social media platforms, and the news. Moreover, students need more support during the online learning of the COVID-19 pandemic to encourage the pursue to continue with online learning after the senior high school level. Furthermore, a healthy mindset and some mental health webinars are essential to promote happiness among students.

The findings could be helpful to the education sectors for them to assess what the effects of online education on the students are. It could also serve as a guide to create programs like webinars about time management and mental health awareness. Through this study, they can come up with a plan that could help everyone with the new online platform.

The teachers, school administrations, and offices will also benefit from this study in terms of understanding the well-being of their students. Guidance counselors will also benefit from the study for them to figure out the factors regarding the happiness of students and how they can give advice. Students will benefit from this study since they will be aware of the factors that might affect their happiness. Future researchers could benefit from this study as a basis for the effectiveness of online learning for students.

C. Limitations and Future Research

This study utilized convenience sampling, consisted of students who are attending a private school. Future studies should include and compare public and private students as they are also utilizing online education. Moreover, the study was conducted during the COVID-19 pandemic, therefore the distribution of the survey was online. There may be differences with the results of the survey was conducted face-to-face. Lastly, the performance of the students was not correlated, therefore the results of this study were solely based on the participants' current emotions.

VI. CONCLUSIONS

The COVID-19 pandemic caused a lot of issues and troubles across the world. Hence, the implementation of several preventive measures such as community quarantines to avoid the spread of the virus. The current study incorporated Self-Determination Theory to evaluate the factors affecting the student's happiness on online learning among Senior High School students during the general community quarantine of the COVID-19 pandemic.

A total of 622 senior high school students participated in the online questionnaire which consists of 45 questions. Furthermore, Structural Equation Modeling was utilized in this study to obtain the relationships of the variables. The happiness of students on online learning during the general community quarantine of the COVID-19 pandemic was evident within the following factors: autonomy, competence, and relatedness. Results showed that autonomy was the most significant factor to students' happiness because students are able to cope with the current COVID-19 pandemic. The second variable was relatedness because continuous communication and support are evident among respondents. Lastly, competence was found to be a negative predictor because students are knowledgeable when it comes to the current state of the COVID-19 pandemic.

As the first study that utilized the self-determination theory approach in the happiness context during the COVID-19 pandemic, the study can provide areas for better innovation in online learning given that there is no definite timeline for this pandemic.

CONFLICT OF INTEREST

"The authors declare no conflict of interest"

AUTHOR CONTRIBUTIONS

"Conceptualization, A.K.S.O. and Y.T.P.; methodology, A.K.S.O. and Y.T.P.; software, A.K.S.O. and Y.T.P.; validation, M.K.C.P., T.M.A., A.S.P. and L.M.B.S.; formal analysis, A.K.S.O. and Y.T.P.; investigation, A.K.S.O. and Y.T.P.; resources, M.K.C.P., T.M.A., A.S.P. and L.M.B.S.; data curation, M.K.C.P., T.M.A., A.S.P. and L.M.B.S.; writing—original draft preparation, M.K.C.P., T.M.A., A.S.P. and L.M.B.S.; writing—review and editing, A.K.S.O. and Y.T.P.; visualization, Y.T.P; supervision, A.K.S.O. and Y.T.P.; project administration, Y.T.P.; funding acquisition, Y.T.P. All authors have read and agreed to the published version of the manuscript."

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Ardvin Kester S. Ong is a faculty member of the Department of Industrial Engineering, Faculty of Engineering, University of Santo Tomas, Manila, Philippines. He holds a bachelor's degree in chemistry, a master's in engineering management, and a PhD in industrial engineering obtained from Mapua University. He was an exchange student for his graduate research, which he conducted at the Industrial and Systems Engineering Department, Chung Yuan Christian University (CYCU), Taiwan ROC. During his stint at CYCU, he published an ISI-abstracted and Scopus-indexed paper on supply chain management. He received a perfect general weighted average of 1.00/1.00 during his Ph.D. Dr.Ong published several SCI/SSCI-abstracted papers on reputable journals such as Foods (MDPI), Sustainability (MDPI), Nuclear Engineering and Technology (Elsevier), International Journal of Disaster Risk Reduction (Elsevier), Utilities Policy (Elsevier), and International Journal of Science Education (Taylor & Francis Online). His research interests are on supply chain optimization, consumer preferences, marketing strategies, human factors and engineering focusing on consumer behavior, and data mining and analytics.

Yogi Tri Prasetyo is currently an associate professor in the School of Industrial Engineering and Engineering Management, Mapúa University, Philippines. He received a bachelor of engineering in industrial engineering from Universitas Indonesia (2013) with a GPA higher than 3.50/4.00. He also studied for one year (2011-2012) at Waseda University, Japan, during his junior year as an undergraduate exchange student. He received an MBA (2015) and a Ph.D. (2019) at the age of 27 from the Department of Industrial Management National Taiwan University of Science and Technology (NTUST), with a concentration in human factors and ergonomics. He was awarded as NTUST Outstanding Youth with a perfect GPA of 4.00/4.00. Dr.Yogi has a wide range of research interests including human-computer interaction particularly related to eye movement, color optimization of military camouflage, strategic product design, usability analysis, and now he is currently doing accident analysis and prevention. He published several SCI/SSCI-indexed journals in International Journal of Infectious Diseases, International Journal of Disaster Risk Reduction, Utilities Policy, Nuclear Engineering and Technology, International Journal of Science Education, Foods (mdpi), Sustainability (mdpi), Healthcare (mdpi), Displays, WORK: A Journal of Prevention, Assessment & Rehabilitation Color Research and Application, Journal of Eye Movement Research, several Scopus-Indexed journals such as Journal of Open Innovation: Technology, Market, and Complexity (mdpi), Algorithms (mdpi), Malaysian Journal of Public Health Medicine, and International Journal of Emerging Technologies in Learning, also several conference proceedings. In addition, Dr.Yogi has contributed to several international conferences as co-chair, chair session, and even committee member with numerous of best presentation awards.

Mark Kenneth C. Paruli is a chemical engineering student of the University of Santo Tomas, Manila, Philippines. He is a dean's lister with a general weighted average of 1.148/1.000 during his first term at the university. He attended Senior High School (SHS) at Mapúa University and was awarded 2nd Best Research Paper in the Science Category. In addition, he was also awarded high honors in his 12th grade.

Trixie M. Alejandro was admitted at Mapua University to take her Senior High School and decided to continue studying for college under the bachelor of science in civil engineering and environmental & sanitary engineering.

Angela S. Parais attended Senior High School (SHS) at Mapua University and currently studying there under bachelor of science in civil engineering (BSCE) as a first-year student.

Leo Matthew B. Sarne is currently taking his second semester as a student of BS data science, a program newly offered by Mapua University.