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Satisfaction, Challenges, and Communication Channel Preferences (SCaCCP) towards Remote Teaching-Learning (RTL) during Coronavirus Disease 2019 (COVID-19)

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Abstract

The unexpected emergence of the deadly COVID-19 all over the world affected very much the education sector which led into the use of remote teaching-learning (RTL). This gave rise to the conduct of this study which focused on the profile of the 127 faculty members and 942 student respondents along with their level of satisfaction, degree of challenges encountered and communication channel preferences towards the remote teaching-learning. The respondents were the graduate and undergraduate faculty and students at a certain State University in Pangasinan, Philippines who experienced the RTL from Academic Years 2020-2022. The expanded Technology Model (TAM) was the theoretical model behind this study. The quantitative descriptive method and purposive sampling were used. The instrument was adopted and administered through google forms. In analyzing the data: frequency counts and percentages are used in terms of the profile of respondents; weighted mean, average weighted mean, and ranking are utilized in level of satisfaction, degree on seriousness of challenges encountered and communication channel preferences while t-test was used in computing the significant difference along satisfaction, challenges, and communication channel preference. Results revealed that the satisfaction level on remote teaching-learning was Highly Satisfied. On the other hand, the degree of seriousness encountered by teachers and students in RTL was moderate. The top three picked preferred communication channel preferences of the respondents were Group Video Conferencing, Email, and Learning Management System (LMS) discussion forum. The level of satisfaction, the challenges encountered are significantly different except on communication channel preferences.

Keywords: COVID-19, Remote Teaching-Learning (RTL), Satisfaction, Challenges, Communication Channel Preferences

Introduction

Before March 12, 2020, classroom interactions between the students and teachers were highly observed. However, with the shocking announcement made by the World Health Organization (WHO, 2020) about the deadly COVID-19 that affected the education sector across the globe wherein over 114 countries suspended the onsite (in-person) conduct of classes which further called for the implementation of physical distancing on all kinds of transactions (UNESCO, 2020a; CDC 2020). Philippine education decision-makers have adopted mitigating measures such as isolation, social distancing, skeletal workforce, and full-closure of the education systems and among others to curtail if not lessen the extreme ill-effects of the contagious COVID-19 (Dulay & Manuel, 2021; Ferri, et al. 2020; WHO, 2020). This scenario brought to an immediate shift the traditional practice (face-to-face) contexts to the accelerated technology utilization and integration as well. List of free educational platforms and resources that can be used for online learning according to the needs of each educational institution was provided (UNESCO, 2020b) and this paved way to the so-called use of remote teaching (Moser, et al. 2021; Donelly, et al., 2021). The word "remote" according to

Harms et al. (2014) was derived from the Latin word removere, which transmuted to remotus, to mean "move away or move back" or simply "removed". In its basic form, "remote" therefore implies far-flung (or far afield), isolated and distant (from the actual source or epicentre). Hodges, et al. (2020) described remote teaching as a temporary and abrupt shift to instructional delivery due to crises brought about by unpredicted calamities or life-threatening issues i.e. weather, war, or health. Said kind of teaching is not the same with the usual online teaching done simply because this can be packaged in a different delivery mode so that instruction can be accessible to others via broadband internet and computers (Russell, 2020; Moser, et al., 2021). On the other hand, remote learning involves the provision of utilizing alternative modes of learning in the educational scheme to ensure flexible learning during emergency situations (Ali 2020; Huang, et al, 2020). Relative to this emergency remote teaching is associated in this paper wherein it deemphasises person-to-person contact, however; putting in place the transmission of curriculum contents to its direct recipients (Jili, et al. 2021). With this set-up, individuals regardless of their geographic location were given enough opportunity to attend open education wherein there is no need for them to travel due to restrictions implemented by the government to avoid the transmission of COVID-19 that is highly fatal to one's health condition. They can attend classes outside the four walls of the classroom so long as they have computer, smartphones, internet (Jili, et al., 2021; Tsabedze and Ngoepe, 2020; Blessinger and Bliss, 2016). Hence, such study was conducted to determine the Satisfaction, Challenges, and Communication Channel Preferences (SCaCCP) towards Remote Teaching-Learning (RTL) during COVID-19 of students and faculty members both in undergraduate and graduate programs of one State University in Pangasinan, Philippines. The theoretical framework used was patterned after the Technology Acceptance Model (TAM) which was initially developed by Davis, et al. (1989) and is one of the most popular frameworks for analyzing consumer acceptance intentions. TAM analyzes consumer acceptance intentions through perceived usefulness and perceived ease of use (Al-Emran, et al. 2020; Shin, 2018).

The extended TAM, which includes the behavioral intention (satisfaction, challenges, preferences) to use technology in the impact on actual system use (remote teaching-learning), has been used to analyze consumer acceptance of education.

Methods

The respondents are composed of 127 faculty members and 942 students of Pangasinan State University who experienced the use of Remote Teaching-Learning from the Academic Years 2020-2022.

The purposive sampling, quantitative descriptive method, and an adopted questionnaire were utilized, and the instrument was administered using the google forms (Ferri, et al. 2020). In analyzing the data: frequency counts and percentages are used in profile of respondents; weighted mean, average weighted mean, and ranking are utilized in level of satisfaction, degree of seriousness of challenges encountered and level of preference in remote teaching-learning by the respondents with verbal description as: least satisfied/serious/preferred (1.0-1.49); less satisfied/serious/preferred (1.50-2.49); moderately satisfied/serious/preferred (2.50-3.49); highly satisfied/serious/preferred (3.5-4.49) and very highly satisfied/serious/preferred (4.50-5.0). The significant difference across selected variables was computed using the t-test.

Results and Discussions

Online learning can be defined as instruction delivered on a digital device that is intended to support learning (Clark & Mayer, 2016). In contrast, Barbour et al (2020) defined remote teaching as the temporary shift of an instructional delivery mode due to an emergence of crisis circumstances in whatever form which would otherwise be returned to its original format/system as soon as the upliftment or once the said emergency has abated.

On Profile

The selected profile variables about the faculty and students are included to serve as backgrounder. Table 1 shows the age, sex, attendance to ICT-use related training, and length of exposure in online teaching of the faculty.

Table 1. Profile of Respondents

Faculty		**Profile Variable**	**Students**	
Frequency (f)	**Percent (%)**		**Frequency (f)**	**Percent (%)**
		1. Age		
39	*31*	Below 24	243	26
85	67	25-54	403	43
3	*2*	55-64	194	21
127	**100**	**Total**	**942**	**100**
		2. Sex		
75	60	Female	619	66
52	40	Male	323	34
127	**100**	**Total**	**942**	**100**
		3. Attendance to ICT use-related training		
103	81	With	620	66
24	19	Without	322	34
127	**100**	**Total**	**942**	**100**
		4. Length of Exposure in Online Teaching		
48	38	1-12	344	37
53	42	13-24	503	53
16	12	25-36	73	8
10	8	37-48	22	2
127	**100**	**Total**	**942**	**100**

The faculty age range is between 25 to 54 (67%), followed by age group of below 24 years old with 39 or 31%, and 3 or 2% falls on the age bracket of 55-64. In terms of sex 60 out of the 127 respondents or 75% of them are females while 52 or 40% are males. attended ICT-use related training (81%), with length of exposure in online teaching for 13 to 24 years (42%), 38% are exposed from 1-12 years on online teaching, 12% with 25 to 26 years exposure on online teaching and 8% are exposed in online teaching from 37 to 48 years.

On the other hand, students' age range is also 25-54 (43%), 243 or 26% are of age bracket 24 and below, and 194 or 21% had an age range of 55-64. As to their sex, out of 942 respondents 619 or 66% are females while males composed of 322 or 34%. There are 620 (66%) who received an ICT-related training (66%) while 322 or 34% have not received an ICT-related training. As to expo-

sure in online teaching, 53% have 13 to 24 years, 37% (1 to 12 years), 8% (25 to 36 years), and 2% (37 to 48 years). Along this line, conducted by Volkom, et al. (2014) which focused on sex and generational differences in uses and perceptions of technology showed that out of 262 respondents 68% (158) were women and 32% (104) were men, their age ranging from 18 to 92 wherein the respondents' attitudes toward using technology, contexts of technology use, device-type choice, and use of social networking services (SNS).

On Level of satisfaction towards remote teaching-learning

Perceptions relative to satisfaction on the quality of their online courses are important since it is believed that these have a direct impact on learning and motivation as claimed by Davies, et al (2010). In addition, it can also serve as a frame of reference to further understand the effectiveness of one's success (Casanova & Paguia, 2021; Sadaf, et al., 2019). The perceived overall average weighted mean computed on the level of satisfaction towards remote teaching-learning by teachers and students is High as shown in Table 2. This supports Phongsatha and Cleesuntorn (2017) claim that video-conference service provided students with an effective teaching method and was helpful for faculty members in advising, tutorial, discussion, and work presentation.

On satisfaction level towards remote teaching as perceived by respondents

Table 2. Satisfaction Level towards Remote Teaching as perceived by the respondents

Remote teaching helps in:	**Mean (Teachers)**	**Rank**	**Verbal Description**	**Mean (Students)**	**Rank**	**Verbal Description**
1. Grading online assignments	3.84	5	HS	3.64	4	HS
2. Providing feedback	3.86	3.5	HS	3.71	3	HS
3. Collecting assignments	3.95	2	HS	3.77	2	HS
4. Messaging students and colleagues	**4.02**	**1**	**HS**	3.63	5	HS
5. Facilitating online discussions	3.86	3.5	HS	3.59	7.5	HS
6. Managing grades	3.74	9	HS	**3.78**	**1**	**HS**
7. Sharing lecture material	3.79	8	HS	3.59	7.5	HS
8. Reflecting on teaching methods	3.83	6	HS	3.54	9	HS
9. Creating portfolio	3.82	7	HS	3.62	6	HS
10. Collaborating with others	3.23	10	MS	3.49	10	MS
Average Weighed Mean	**3.79**		**HS**	**3.63**		**HS**

It can be observed that faculty are highly satisfied towards remote teaching-learning messaging colleagues and students (4.02), collecting assignments (3.95), providing feedback (3.86), facilitating online discussion (3.86), grading online assignments (3.84), reflecting on teaching methods (3.83), creating portfolio (3.82), sharing lecture material (3.79), managing grades (3.74) except on

collaborating with others with a mean of 3.23 which is verbally described as moderate in terms of satisfaction level. Likewise, students are also highly satisfied along the nine (9) variables such as on managing grades (3.78), collecting assignments (3.77), providing feedback (3.71), grading online assignments (3.64), messaging students and colleagues (3.63), facilitating online discussion (3.59), sharing lecture material (3.59), and reflecting on teaching methods (3.54), otherwise they are moderately satisfied on collaborating with others (3.49). This shows that remote teaching-learning provides different level of satisfaction for faculty and students since its role varies from one group to another group along instruction-related activities but one thing in common reflects that with remote teaching-learning satisfaction level on collaboration with others is quite not high as the other variables. This conforms the claim of Amin & Sundari (2020); Mujačić et al. (2014); and Janitor et al. (2012) wherein it was concluded in their papers that teaching-learning technology devices used in remote teaching such as Google Classroom, Google Meet, Microsoft Teams, IBM SmartCloud Meetings, Zoom, Skype, and among others had proven its very high significance in academic setting during the occurrence of COVID-19 especially in virtual meeting and presentation along business, instruction, and research. The use of web conferences, virtual oral presentation, and Microsoft Live Meeting significantly influences the increase of satisfaction and further lead into a more active way of learning.

On degree of seriousness of the challenges encountered in remote teaching and learning as perceived by teachers and students

The integration of internet education brought about by COVID-19 provided the higher education institutions new avenue for faculty and students to conduct classes via synchronous and asynchronous mode. Faculty are given the chance to use telepresence technologies through zoom to assure online interaction from the class (Kang & Park, 2022; Louten & Daws, 2022). With such use of varied advance technologies; class members are able to upload and make the curricular related activities like course topics, lecture content sequences, evaluation methods, and the like be available and accessible for both faculty and student (Birgili & Demir, 2022; Rasheed et al., 2020). Taking into consideration the use of RTL the following are observed: a) chat questions, b. submit answers, c. verbally ask questions (Rasheed et al., 2020); d. faculty assume more active role in facilitating learning (Bolliger, 2004; McFarland & Hamilton, 2005; Swan, 2001), e. establish close relationship with learners (Bolliger, 2004; Rueda et al., 2017), f. provide feedback, (Swan, 2001), g. assess whether students' level of learning, g. encourage participation, and; h. can conduct other related instructional functions (Bolliger, 2004; McFarland & Hamilton, 2005). However, challenges in using learning technology are some of the factors that students and teachers face as can be gleaned in table 3.

Table 3. Degree of Challenges Encountered in remote teaching as perceived by Teachers and Students

Remote Teaching poses challenge on:	Mean (Teachers)	Rank	Verbal Description	Mean (Student)	Rank	Verbal Description
1. Organizing online meetings	3.32	1	MS	3.46	1	MS
2. Helping students with technical problems	3.01	12	MS	3.31	7.5	MS

3. Collaborating with other teachers	3.11	5.5	MS	3.29	9.5	MS
4. Following school guidelines	3.03	9	MS	3.27	11	MS
5. Creating online lessons	3.01	12	MS	3.24	15.5	MS
6. Responding to student messages and colleagues	3.08	8	MS	3.26	13	MS
7. Sharing online content	2.98	14	MS	3.37	4	MS
8. Entertaining students complain on grades	3.18	3	MS	3.37	4	MS
9. Setting-up computer equipment	3.10	7	MS	3.35	6	MS
10. Learning to use new online teaching tools	3.11	5.5	MS	3.31	7.5	MS
11. Providing corrective feedback	2.98	15	MS	3.38	2	MS
12. Avoiding copyright infringement	3.17	4	MS	3.24	15.5	MS
13. Taking attendance	2.87	16	MS	3.37	4	MS
14. Tracking participation	3.24	2	MS	3.29	9.5	MS
15. Grading online quizzes	3.02	10	MS	3.26	13	MS
16. Creating online quizzes	3.01	12	MS	3.26	13	MS
Mean	**3.07**		**MS**	**3.31**		**MS**

The average weighted mean is verbally described as moderately serious from the perception of both the faculty and students across all the identified variables. Common in the perception of the faculty and students observed was on the organizing online meetings which received the highest mean of 3.32 from teachers and 3.46 from students, respectively. Among the other variables categorized under the degree of challenges along remote teaching-learning as perceived by the faculty are tracking participation (3.24), entertaining students complain on grades (3.18), avoiding copyright infringement (3.17), learning to use new online teaching tools (3.11), collaborating with other teachers (3.11), setting-up computer equipment (3.10), responding to student messages and colleagues (3.08), following school guidelines (3.03), grading online quizzes (3.02), helping students

with technical problems (3.01), creating online lessons (3.01), sharing online content (2.98), providing corrective feedback (2.98), and taking attendance (2.87). On the other hand, the students' perceived degree of challenges on the same variables shows the sequence as providing corrective feedback (3.38), sharing online content (3.37), entertaining students complain on grades (3.37), taking attendance (3.37), helping students with technical problems (3.31), learning to use new online teaching tools (3.31), collaborating with other teachers (3.29), tracking participation (3.29), following school guidelines (3.27), tracking participation (3.29), responding to student messages and colleagues (3.26), grading online quizzes (3.26), creating online quizzes (3.26), creating online lessons (3.24), and avoiding copyright infringement (3.24). The data reflects that remote teaching-learning for teachers and students' perspective show moderate difficulty in addressing group and individual classroom concerns. This can be attributed to less human connection wherein due to the remote classroom being used during COVID-19 the opportunity to engage, connect, share, and bond personally between teacher and students to address challenging learning material or even personal issues is limited unlike the traditional classroom setting (Jen, 2020).

This can be associated to the profile of the respondents whose age range categorized as millennial and gen X who are familiar to internet (Sakdiyakorn et al., 2021) and of course the attendance to ICT-related training is also taken into account. The perceived degree of challenges by teachers varies in terms of rank over the perception of students since teachers directly experience the utilization of the apps in RTL compared to students wherein in using Microsoft Teams particularly in online class delivery.

On level of preference in remote teaching-learning by the teachers and students in terms of communication channel

Jen (2020) in her article stated that the recent shift on remote classroom environment made teachers to deliver lessons, conduct assessments, and communicate with their students through software and technology. Hence, the remote teaching-learning facilitation process made use of various communication modes with the aid of digital devices, computer software programs, websites, mobile applications, mobile phones, desktops, tablets, and other available technology products (Amin & Sundari, 2020). In this paper as shown in table 5, the use of learning management system (LMS) discussion forum, email, group video conferencing, class facebook group, one-to-one text messaging, one-to-one video conferencing, and one-to-one voice conversation were extensively applied in the teaching-learning activity to provide the expected quality of education due to COVID-19 pandemic that forced the education industry to take a full shift of the usual practice. Teachers conduct their presentations, web conference, and discuss the topics virtually which is termed as synchronous. Students learn using their desktop, laptop, tablet, and even cellphones whose features are highly enhanced and are functional with an internet connection which is associated to internet-based approach (Flatley, 2007; Mujačić, et al., 2014).

Table 4. **Communication Channel Preference in Remote teaching as perceived by teachers and students**

Communication channel utilizes:	**WM (Teachers)**	**Rank**	**Verbal Description**	**WM (Students)**	**Rank**	**Verbal Description**
1. LMS discussion forum	3.56	3	HP	3.61	3	HP
2. Email	3.94	2	HP	3.73	2	HP
3. Group Video Con-	4.20	1	VHP	3.92	1	HP

ferencing						
4. Class Facebook Group	3.37	4	MP	3.42	4	MP
5. One-to-one text messaging	2.37	7	MP	2.23	7	MP
6. One-to-one video conferencing	3.03	5	MP	2.68	5	MP
7. One-to-one voice conversation	2.79	6	MP	2.65	6	MP
AWM	**3.32**		**MP**	**3.17**		**MP**

The communication channel preference of teachers in remote teaching are group video conferencing (4.20) described as very highly preferred, email (3.94) as highly preferred, LMS discussion (3.56) as highly preferred, class facebook group/messenger (3.37), one-to-one video conferencing (3.03), one-to-one voice conversation (2.79), and one-to-one text messaging (2.37). It is interesting to note that in terms of rank-order of the identified communication channels, students have the same result with a minimal difference in terms of their average mean i. e. group video conferencing (3.92) described as highly preferred, email (3.73) as highly preferred, LMS discussion (3.61) as highly preferred, class facebook group/messenger (3.42), one-to-one video conferencing (2.68), one-to-one voice conversation (2.65), and one-to-one text messaging (2.23). Relative to this, the study conducted by Amin & Sundari (2020) in terms of students' preferences on the use of the Cisco WebEx Meeting (CWE), Google Classroom (GC), and WhatsApp (WA) among three different groups of student-participants during ERT/the Covid-19

Pandemic: they found out that WhatsApp got the highest percentage on material delivery while GC gained on top of presenting language exercise. In addition, almost half of participants on each group-participant, 44%-61% of them, perceived that the digital platforms they used during ERT were as beneficial and potential in language learning.

On significant difference between the perceived satisfaction, challenges, and communication channel in remote teaching-learning as perceived by teachers and students

Table 6. Significant difference between the perceived satisfaction, challenges, and communication channel preference in remote teaching-learning as perceived by teachers and students

Variables	**Respondents**	**Mean**	**Mean Difference**	**SD**	**t**	**Sig. (2-tailed)**
Satisfaction in Remote Teaching	Teachers	3.79	0.16	.20	2.26	**0.03***
	Students	3.63		.08		
Challenges in remote teaching	Teachers	3.07	0.24	.10	2.13	**0.00***
	Students	3.31		.06		
Communication Channel Preference	Teachers	3.32	-0.15	.59	2.44	0.64
	Students	3.17		.60		
	Students	3.49		.15		

*Correlation is significant at the 0.05 level (2-tailed)

Satisfaction towards Remote Teaching

The means are significantly different at $p < 0.05$. The calculated t exceeds the critical value ($2.86 > 2.26$), so the means are significantly different. This implies that faculty members satisfaction on remote teaching plays a significant role in instruction delivery system.

Challenges towards Remote Teaching

The absolute value of the calculated t exceeds the critical value ($8.79 > 2.13$) which shows significant difference p value (0.00) is lesser than 0.05. This reflects that the faculty and students vary in terms of their perceived challenges towards remote teaching.

Communication Channel Preference

The calculated value is smaller than the critical value ($0.45<1.78$), so the means are not significantly different. This shows that the kind of communication channel preferred both by the faculty and students are the same towards remote teaching-learning. This supports the study of Duraku & Hoxha (2020); Lei & So (2021) wherein similarities and differences between the two groups in terms of the factors affecting online teaching and learning satisfaction was revealed.

Conclusion

It is then concluded that remote teaching-learning during the COVID-19 pandemic time is highly relevant and applicable to higher education (graduate and post-graduate education) as reflected in the high and positive acceptance level of respondents on its benefits. It is flexible so education and other business sectors may continually utilize such to continually provide the expected quality of instruction delivery and response expected from the key players (school officials, faculty, teachers, students, stakeholders alike) wherein full engagement can be derived from everyone and exploring one's potential on the use of various modes of technology devices as a form of communication channel can become highly desirous and advantageous in addressing the needs of Industrial Revolution 4.0 (IR 4.0) without compromising the significance of onsite presence of faculty and students in conducting teaching-learning process.

The respondents' responses can be well-categorize in future studies to derive a better scenario on the impact of remote teaching in terms of students' performance based on the kind of instructional delivery mode they received from remote teaching as well as on the faculty performance. The observed satisfaction level and degree of seriousness brought about by using remote teaching-learning can be further enhanced and lessen by continually carrying out the goal of technology-based education by strengthening the school officials, faculty, students, parents and even stakeholders through competence enhancement via knowledge, skills, and development of IR 4.0.

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