What Now: Online Learning Competence of Pre-Service Teachers After COVID-19

Abstract

Flexible Learning (FL) has become the norm in the Philippines after it experienced a medical health crisis along with other countries in the world. The Philippine chairman for Commission on Higher Education made it clear that FL will continue as the country, through the state universities and colleges, has invested in technology infrastructure such as learning management systems and internet, teacher trainings, and facilities designed for online classes. While teachers received trainings for FL, the question, however, is whether the students have achieved some level of online learning competence after the abrupt implementation of FL in 2020. This study, therefore, aimed to determine the online learning competence of pre-service teachers in all levels and specialization as to type of device used, type of connectivity, and exposure to online engagements. Using a descriptive-inferential design in research, this study covered a total of 254 pre-service teachers at a teacher training institution in the Philippines. It appeared that the online learning competence of pre-service teachers in terms of computer and technology competencies, independent learning competencies, and online communication competencies is high. When grouped according to year level, specialization, type of device used, type of connectivity, and exposure to online engagements, their online learning competence as to the previously mentioned variables is also high. Interestingly, there is significant difference in the online learning competence of pre-service teachers There is a significant difference in online learning competence of Pre-service teachers in terms of computer and technology, independent learning, and online communication when classified according to type of device used, type of connectivity, and exposure to online engagements however, there is no significant difference when classified according to year level and specialization. Although the online learning competence of the students who participated in this study is High, their overall skills in the competencies is average. It appears that the more obvious issues in online learning such as internet connection, availability of digital technology tools, and learner autonomy are pervading in all facets of this learning modality. The researcher suggests that in designing course contents, the faculty, program heads, dean, and instructional development committee sit together to plan out the course structure and the method with which the learning materials are provided to the students.

1. INTRODUCTION

The modality of learning in the Philippines did not fully revert to face-to-face (f2f) instruction after a sudden shift to flexible learning in 2020. Hybrid learning is still an option when met with certain restrictions for f2f meetings. This showed evidence of how the delivery of instruction has changed a non-negotiable f2f meeting during pre-COVID era to a now flexible mode of instructional delivery. In a statement, the Philippine Commission on Higher Education chair said that "flexible learning" system will "continue in school year 2021 and thereafter" and this will be the norm in the Philippine higher education as going back to the old practice "would have wasted all the investments in technology, in teacher training, in the retrofitting of our facilities", (ABS-CBN News, 2024).

Flexible learning, according to Cassidy et al. (2016),is a pedagogical approach that allows for flexibility in time, place, and audience, including but not limited to the use of technology. The problem with flexible learning that utilizes online tools is that gaps emerged as not all students have the financial capacity to supply themselves with devices and internet connection necessary for online learning, whether this is synchronous or asynchronous, (Matildo & Dagondon, 2022). According to Dabbagh and Bannan-Ritland (2005), online learning is "the type of instruction that is mediated via the internet. Instruction may be synchronous or asynchronous and various technologies can be used to mediate the process."

Online learning can be a viable option as it encourages self-paced learning. In fact, with online learning "students can complete their training in their own time and according to their own schedules" (DMI, 2018). This is in line with the constructivist's point of view as discussed in theoretical framework of this study which states that "people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences" (Fosnot, 1996; Steffe & Gale, 1995).

Although teachers' roles lean toward the facilitation and the design of learning experiences that allow learner autonomy, students however, do not always have a high level of autonomy. Technology readiness, therefore, is a critical dimension connected with students' self-directed learning in an online learning environment (Geng et al, 2019). To provide students with the necessary skills and competencies for online learning success, specific online learning competencies must be identified and prioritized. Bigatel, et al. (2012) identified the use of computer and technology as one of the competencies in online learning.

As the Philippines embraces the modalities of learning under the flexible learning system, it is essential to consider several factors first. According to Joaquin et al. (2020), these considerations must include teacher capacity, situation and context of the learner, and efficiency of the learning environment. But more importantly, we must consider as well the most evident issues of internet speed, cost of materials, and mode of delivery. In a study conducted by Kuama and Intharaksa (2016), it was implicated that student's readiness for online learning should be measured before the course starts.

1.1 Problem Statement

This study aimed to determine the online learning competence of pre-service teachers year level, specialization, type of device used, type of connectivity, and exposure to online engagements. It sought to answer the following specific questions:

1. What is the level of online learning competence of pre-service teachers in terms of computer and technology, independent learning, and online communication when taken as an entire group and when classified according to year level, specialization, type of device used, type of connectivity, and exposure to online engagements?
2. Is there a significant difference in the online learning competence of pre-service teachers in terms of computer and technology, independent learning, and online communication when classified according to year level, specialization, type of device used, type of connectivity, and exposure to online engagements?

1.2 Hypothesis

Based on the above stated problems, the following hypotheses were considered.

1. There is no significant difference in the level of online learning competence of pre-service teachers when classified according to year level, specialization, type of device used, type of connectivity, and exposure to online engagements.

2. METHODS

2.1 Research design

This study utilized the descriptive-inferential to investigate relationships between variables without the researcher controlling or manipulating any of them. It covered a total of 245 Bachelor of Secondary Education students at a teacher training institution in the Philippines. Using frequency and percentage, the researcher determined the classifications of pre-service teachers in terms of year level, specialization, type of device used, type of connectivity, and exposure to online engagements.

2.2 Instrumentation

Using an Online Learning Competence Questionnaire, data regarding their competencies in computer and technology, independent learning, and online communication to determine their online learning competence were gathered. The instrument was submitted for face and content validation by a jury composed of five (5) members, one of whom was an external validator. This jury validated the items in the questionnaire by writing before each item the options: Accept, Modify, or Reject. The inter-rater reliability was treated using Cronbach's alpha with 80 percent agreement ratio.

3. RESULTS AND DISCUSSION

<u>Online Learning Competence of Pre-service teachers</u>
To determine the online learning competence of pre-service teachers when they are taken as an entire group and when they are classified according to year level, specialization, type of device used, type of connectivity, and exposure to online engagements, mean was used.

<u>Entire group</u>. When computed, the data revealed that the online learning competence of pre-service teachers as an entire group is High (M=2.97). Furthermore, it appears that in the three competencies of online learning, the Pre-service teachers have High competence in computer and technology (M=3.14), independent learning (M=2.89), and online communication (M=2.88).

By description, it suggests that the pre-service teachers have average skills and competence in computer and technology, but they may develop personal learning strategies, and may be able to express ideas using L2 but with difficulty expressing all their thoughts.

Moreover, it suggests that they can easily manipulate programs installed in their computer. In addition, they can finish their learning tasks at their own pace and time because of a developed personal learning strategy. Apparently, they can engage, express, and collaborate ideas with confidence in virtual classes.

The results herein strengthen the claim of DMI (2018) that online learning is a viable option as it encourages self-paced learning and with it, "students can complete their training in their own time and according to their own schedules."

Table 1 shows the data.

Table 1
Level of Online Learning Competence of Pre-service teachers as an Entire Group

Online Learning Competencies	Mean	SD	Description
A. Computer and Technology Competencies	3.14	0.47	High
B. Independent Learning Competencies	2.89	0.46	High
C. Online Communication Competencies	2.88	0.43	High
Overall Mean	2.97	0.37	High

<u>Year level</u>. Regardless of the year level, the pre-service teachers have High competence in online learning in all competencies. In fact, the First-Year students manifested High competence in computer and technology (M=3.11, SD=0.37), independent learning (M=2.97, SD=0.53) and online communication (M=2.93, SD=0.45). The Second-Year students have almost similar competence which is High in computer and technology (M=3.09, SD=0.50), independent learning (M=2.81, SD=0.43), and online communication (M=2.80, SD=0.37). Also, the Third-Year students have High competence in computer and technology (M=3.25, SD=0.49), independent learning (M=2.94, SD=0.46), and online communication (M=2.98, SD=0.51). Lastly, the Fourth-Year students also have High competence in computer and technology (M=3.07, SD=0.52), independent learning (M=2.99, SD=0.26), and online communication (M=2.89, SD=0.29).

Results suggest that regardless of the year level, the pre-service teachers are equipped with the necessary skills in operating and manipulating computer and technology, they can learn on their own using their developed personal learning strategy, and they are able to communicate with ease and confidence both in writing and speaking whether this is by sending an email or expressing opinions in a virtual class.

Table 2 reveals the data.

Table 2
Level of Online Learning Competence of Pre-service teachers as to Year Level

Online Learning Competencies	First Year			Second Year			Third Year			Fourth Year		
	Mean	SD	Desc.	Mean	SD	Desc.	Mean	SD	Desc.	Mean	SD	Desc.
A. Computer and Technology Competencies	3.11	0.37	High	3.09	0.50	High	3.25	0.49	High	3.07	0.52	High
B. Independent Learning Competencies	2.97	0.53	High	2.81	0.43	High	2.94	0.46	High	2.99	0.26	High
C. Online Communication Competencies	2.93	0.45	High	2.80	0.37	High	2.98	0.51	High	2.89	0.29	High

Specialization. It appears in Table 3 that the pre-service teachers have High competence in all areas of online learning notwithstanding their varied specializations. It shows that the English majors marked High competence in computer and technology (M=3.28, SD=0.50), independent learning (M=2.80, SD=0.40), and online communication (M=2.91, SD=0.43). The Filipino majors as well have High competence in computer and technology (M=3.01, SD=0.43), independent learning (M=2.82, SD=0.44), and online communication (M=2.79, SD=0.39). The Mathematics majors also have High competence in computer and technology (M=3.28 SD=0.48), independent learning (M=3.07, SD=0.60), and online communication (M=3.12, SD=0.49). It also shows that the Social Science majors have High competence in computer and technology (M=3.04, SD=0.50), independent learning (M=2.98, SD=0.49), and online communication (M=2.86, SD=0.43). Lastly, the Science majors, too, have High competence in computer and technology (M=3.19, SD=0.38), independent learning (M=2.88, SD=0.41), and online communication (M=2.87, SD=0.41).

This result suggests that regardless of specialization, the pre-service teachers have average skills in using their digital technology tools to share presentations on videoconferencing platforms, managing time for reading and doing module tasks, and acquiring quality knowledge via online learning.

Table 3 shows the data.

Table 3
Level of Online Learning Competence of Pre-service teachers as to Specialization

Online Learning Competencies	English			Filipino			Mathematics			Social Science			Science		
	Mean	SD	Desc	Mean	SD	Desc	Mean	SD	Desc	Mean	SD	Desc	Mean	SD	Desc
A. Computer and Technology Competencies	3.28	0.50	High	3.01	0.43	High	3.28	0.48	High	3.04	0.50	High	3.19	0.38	High
B. Independent Learning Competencies	2.80	0.40	High	2.82	0.44	High	3.07	0.60	High	2.98	0.49	High	2.88	0.41	High
C. Online Communication Competencies	2.91	0.43	High	2.79	0.39	High	3.12	0.49	High	2.86	0.43	High	2.87	0.41	High

Type of device used. Results of the study revealed that when classified according to type of device used, the pre-service teachers have High competence in computer and technology (M=2.96, SD=0.43), independent learning (x=2.85, SD=0.46), and online communication (x=2.86, SD=0.43) for students who use Device 1 or Android/iOS phone/tablet in online learning. For students who use Device 2 or Windows/Mac laptop/desktop they have High competence as well in computer and technology (M=3.21, SD=0.52), independent learning (M=3.09, SD=0.62), and online communication (M=2.97, SD=0.60). On the other hand, for students who use Device 3 or both Android/iOS phone/tablet and Windows/Mac laptop/desktop, the students have a Very High competence in computer and technology (M=3.45, SD=0.36), High competence in independent learning (x=2.92, SD=0.44) and online communication (M=2.91, SD=0.38).

It appears that when it comes to the type of device used by the pre-service teachers, those who use both phone/tablet and laptop/desktop in online learning have more advanced competence in computer and technology compared to those who use either of the devices. They can undoubtedly download and install software and change configuration settings on the device that they use in online class. Moreover, they may have efficient skills in making searches, setting bookmarks, and downloading any type of file.

Table 4 shows the data.

Table 4
Level of Online Learning Competence of Pre-service teachers as to Type of Device Used

Online Learning Competencies	Device 1			Device 2			Device 3		
	Mean	SD	Desc.	Mean	SD	Desc.	Mean	SD	Desc.
A. Computer and Technology Competencies	2.96	0.43	High	3.21	0.52	High	3.45	0.36	Very High
B. Independent Learning Competencies	2.85	0.46	High	3.09	0.62	High	2.92	0.44	High

C. Online Communication Competencies	2.86	0.43	High	2.97	0.60	high	2.91	0.38	High

Type of connectivity. When the pre-service teachers are classified according to type of connectivity, the Type 1 users or those without continuous connection (with internet-ready phone/computer but intermittent connectivity to data or wifi) have High level of online learning competence in terms of computer and technology (M=2.83, SD=0.33), independent learning (M=2.76, SD=0.46), and online communication (M=2.66, SD=0.39). Type 2 users or those with limited connection (with internet-ready phone/computer but no stable internet speed for data or wifi) also have High online learning competence level in terms of computer and technology (M=3.11, SD=0.45), independent learning (x=2.90, SD=0.47), and online communication (M=2.89, SD=0.43). However, Type 3 users or those with stable connection (with internet-ready phone/computer and faster speed for data and wifi) have Very High competence in computer and technology (M=3.58, SD=0.38), High in independent learning (M=2.93, SD=0.40), and online communication (M=3.01, SD=0.39).

These results show that students who have Type 3 connection have more efficiency in using their digital technology tools. With that type of connectivity, they can use either a phone or laptop for online class. They may have skills in setting up headphones or speakers and a microphone if their class has videoconferencing. In addition, they can learn from the things that they hear like mini-lecture videos, audio recordings, or podcasts. They can also speak with confidence as they have in f2f communication during online class.

Indeed, Ghavifekr and Rosdy (2015) are precise when they claimed that "technology-based teaching and learning is effective because using ICT tools and equipment will prepare an active learning environment that is more interesting and effective for both teachers and students."

Table 5 shows the data.

Table 5
Level of Online Learning Competence of Pre-service teachers as to Type of Connectivity

Online Learning Competencies	Type 1			Type 2			Type 3		
	Mean	SD	Desc.	Mean	SD	Desc	Mean	SD	Desc
A. Computer and Technology Competencies	2.83	0.33	High	3.11	0.45	High	3.58	0.38	Very High
B. Independent Learning Competencies	2.76	0.46	High	2.90	0.47	High	2.93	0.40	High
C. Online Communication Competencies	2.66	0.39	High	2.89	0.43	High	3.01	0.39	High

Exposure to online engagements. The study revealed that when pre-service teachers are classified according to their exposure to online engagements, the ones who preferred Modular Learning have High competence in computer and technology (M=3.08, SD=0.47), independent learning (M=2.82, SD=0.44), and online communication (M=2.22, SD=0.41). Whereas those who chose Virtual Class have Very High competence in computer and technology (M=3.31, SD=0.42), High in independent learning (M=3.11, SD=0.47), and online communication (M=3.10, SD=0.44). On the other hand, those who prefer Blended Learning, have High competence in computer and technology (M=3.22, SD=0.60), independent learning Mx=3.08, SD=0.34), and online communication (M=2.92, SD=0.29).

This result shows that students who prefer Virtual Class require more opportunities to utilize their computers and other digital technologies. Thus, they can do more tasks and content engagement as well as meaningful interactions with the teacher and other students. It also follows that they have excellent skills in making searches, setting bookmarks, and downloading any type of file that aid their personal learning strategies.

Table 6 presents the data.

Table 6
Level of Online Learning Competence of Pre-service teachers as to Exposure to Online Engagements

Online Learning Competence	Virtual Class			Modular Learning			Blended Learning		
	Mean	SD	Desc.	Mean	SD	Desc.	Mean	SD	Desc.
D. Computer and Technology Competencies	3.08	0.47	High	3.31	0.42	Very High	3.22	0.60	High
E. Independent Learning Competencies	2.82	0.44	High	3.11	0.47	High	3.08	0.34	High
F. Online Communication Competencies	2.82	0.41	High	3.10	0.44	High	2.92	0.29	High

Differences in the Online Learning Competence of Pre-service teachers when Classified According to Variables

To determine the significant difference in the online learning competence of pre-service teachers when classified as to variables, One-way ANOVA was used. Alpha level was set at 0.05.

Year Level. As revealed in the study, there is no significant difference in the online learning competence of pre-service teachers when classified according to year level in terms of computer and technology competencies), independent learning competencies, and online communication competencies. This suggests that regardless of their year level, the Pre-service teachers have the same level of online learning competence.

Table 7 shows the data.

Table 7
ANOVA Results in the Online Learning Competence of Pre-service teachers as to Year Level

Online Learning Competence		Sum of squares	df	Mean square	F-ratio	Two-tailed probability
Computer and Technology Competencies	Between groups	.771	4	.257	1.159	.327
	Within groups	35.258	241	.222		
	Total	36.029	245			
Independent Learning Competencies	Between groups	.952	4	.317	1.523	.211
	Within groups	33.135	241	.208		
	Total	34.087	245			
Online Communication Competencies	Between groups	.975	4	.325	1.811	.147
	Within groups	28.533	241	.179		
	Total	29.508	245			

Specialization. When the pre-service teachers were classified according to their specialization, it appeared that there is no significant difference with their online learning competence.

This data reveals that regardless of their specialization, the pre-service teachers have the same level of online learning competence.

The data is shown in Table 8.

Table 8
ANOVA Results in the Online Learning Competence of Pre-service teachers as to Specialization

Online Learning Competence		Sum of squares	df	Mean square	F-ratio	Two-tailed probability
Computer and Technology Competencies	Between groups	2.309	4	.577	2.705	0.32
	Within groups	33.720	241	.213		
	Total	36.029	245			
Independent Learning Competencies	Between groups	1.301	4	.325	1.568	. 185
	Within groups	32.785	241	.208		
	Total	34.087	245			
Online Communication Competencies	Between groups	1.186	4	.297	1.655	.163
	Within groups	28.322	241	.132		
	Total	29.508	245			

Type of device used. As presented in Table 9, the online learning competence of pre-service teachers and their computer and technology competence have a highly significant difference ($P=.000$). This implies that their online learning competence level varies depending on what device they are using and what they use it for. Furthermore, it appears that those who use both a

phone/tablet and laptop/desktop could do more complicated tasks with these tools compared to those who use only either of the devices mentioned.

On the other hand, there is no significant difference in the online learning competence of pre-service teachers in terms of independent learning and online communication.

The data is revealed in Table 9.

Table 9
ANOVA Results in the Online Learning Competence of Pre-service teachers as to Type of Device Used

Online Learning Competence		Sum of squares	df	Mean square	F-ratio	Two-tailed probability
Computer and Technology Competencies	Between groups	8.694	4	4.347	25.445**	.000
	Within groups	27.335	241	.171		
	Total	36.029	245			
Independent Learning Competencies	Between groups	.631	4	.315	1.508	.225
	Within groups	33.456	241	.209		
	Total	34.087	245			
Online Communication Competencies	Between groups	.155	4	.078	.422	.656
	Within groups	29.353	241	.183		
	Total	29.508	245			

Since there was a highly significant difference in the online learning competence of pre-service teachers when classified as to type of device in terms of computer and technology competencies, Least Significant Difference was used.

As shown in Table 10, a highly significant difference appeared in the online learning competence of pre-service teachers in terms of computer and technology competencies with Type A and Type C devices (P=.000). This shows that students who use both phone/tablet and laptop/desktop in online learning have more advanced competence in computer and technology compared to those who use a phone/tablet only whose computer and technology competence is average.

This data is shown in Table 10.

Table 10
Results in the Online Learning Competence of Pre-service teachers as to Type of Device Used

Online Learning Competence	Position (I)	Position(J)	Mean Difference (I-J)	Sig.
Computer and Technology Competencies	Type A	Type C	.49785**	.000

<u>Type of connectivity</u>. The One-way ANOVA result revealed that when classified according to type of connectivity, a highly significant difference existed in the online learning competence of pre-service teachers in terms of computer and technology competencies ($P=.000$) and a significant difference in online communication competencies ($P=.05$) but there is no significant difference in terms of independent learning competencies.

This indicates that their level of online learning competence differs as to which type of connectivity they have at home when engaging in online learning. The type of connectivity, thus, influences their competence in using digital technologies. Furthermore, the type of connectivity also impacts the opportunities they have in order to interact and express ideas in the virtual classroom. However, their type of connectivity does not affect their learner autonomy. This means that whether they are able to engage or not with teachers and classmates for knowledge creation, they still have the ability to develop their personal learning strategies. This is congruent to Rhim and Han's (2020) core concepts of online learning which stated that independent learners, although may vary, have the ability to develop a personal learning strategy, to find resources for study, and to assess their own progress.

This data is shown in table 11.

Table 11

ANOVA Results in the Online Learning Competence of Pre-service teachers as to Type of Connectivity

Online Learning Competence		Sum of squares	df	Mean square	F-ratio	Two-tailed probability
Computer and Technology Competencies	Between groups	5.578	4	2.789	14.655**	.000
	Within groups	30.451	241	.190		
	Total	36.029	245			
Independent Learning Competencies	Between groups	.328	4	.164	.777	.462
	Within groups	33.759	241	.211		
	Total	34.087	245			
Online Communication Competencies	Between groups	1.106	4	.553	3.116*	0.047
	Within groups	28.401	241	.178		
	Total	29.508	245			

Since there was a highly significant difference in the online learning competence of pre-service teachers when classified as to type of connectivity in terms of computer and technology competencies and significant difference in online communication competencies, Least Significant Difference was used.

As shown in Table 12, a significant difference existed between type of connectivity and online learning competence in terms of: (1) computer and technology competencies with Type 1 and Type 2 connectivity ($P=.02$) and a highly significant difference in Type 1 and Type 3 connectivity ($P=.000$); (2) a significant difference in online communication competencies with Type 1 and Type 2 connectivity ($P=0.05$) and Type 1 and Type 3 connectivity ($P=.02$).

It appears that those who have limited connectivity and stable connectivity have better competence in the area of computer and technology than those who have no continuous connectivity. Apparently, the latter has restrictions in what they are able to do during online class because of their internet connection. Similarly, those who have limited connectivity and stable connectivity have better competence in the area of online communication than those who have no continuous connectivity. It follows that if a student has poor internet connection, he/she may lose the teaching and social presences and thereby will not be able to possess cognitive presence during the discussion in the virtual classroom. In this situation, they have a limited chance to have dialogues and meaningful interactions with the teacher and other students in the process of knowledge creation. In fact, Rhim and Han's (2020) core concepts of online learning and the community of inquiry model of Garrison et al (1999) argued that effective and successful online learning requires each member to achieve and accommodate the three types of presences.

The data is revealed in Table 12.

Table 12
LSD Results the Online Learning Competence of Pre-service teachers as to Type of Connectivity

Online Learning Competence	Position (I)	Position(J)	Mean Difference (I-J)	Sig.
Computer and Technology Competencies	Type 1	Type 2	.27296*	.020
	Type 1	Type 3	.74994**	.000
Online Communication Competencies	Type 1	Type 2	.22472*	.046
	Type 1	Type 3	.34844*	.015

Exposure to online engagements. The One-way ANOVA results showed that when classified according to exposure to online engagements, a highly significant difference appeared in the online learning competence of pre-service teachers in terms of computer and technology competencies (P=.000). The null hypothesis is rejected.

This indicates that the level of online learning competence of pre-service teachers vary as to which online engagements they prefer. Those who opted for Virtual Classes have better competence in the area of computer and technology simply because they have compelling opportunities to utilize their devices during online class.

On the other hand, there is no significant difference noted in terms of independent learning competencies and online communication competencies. This implies that whether the students attend Virtual Classes, or choose Modular Learning, or Blended Learning, their competence in independent learning and online communication is not affected. This is supported by Rhim and Han's (2020) core concepts of online learning wherein it stated that a higher transactional distance means that teaching requires more autonomous learners. Hence, if the students have

autonomy in learning, they are active, capable and independent individuals who may have their own learning processes to explore their environments in knowledge construction. This is also affirmed by the constructivist theory of learning.

The data is shown in Table 13.

Table 13
ANOVA Results in the Online Learning Competence of Pre-service teachers as to Exposure to Online Engagements

Online Learning Competence		Sum of squares	df	Mean square	F-ratio	Two-tailed probability
	Between groups	8.694	4	4.347	25.445**	.000
Computer and Technology Competencies	Within groups	27.335	241	.171		
	Total	36.029	245			
Independent Learning Competencies	Between groups	.631	4	.315	1.508	.225
	Within groups	33.456	241	.209		
	Total	34.087	245			
Online Communication Competencies	Between groups	.155	4	.078	0.422	.656
	Within groups	29.353	241	.183		
	Total	29.508	245			

Since there was a highly significant difference in the online learning competence of pre-service teachers when classified as to exposure to online engagements, Least Significant Difference was used.

Table 14 showed that there is a significant difference in the online learning competence of pre-service teachers in terms of computer and technology competencies with virtual class and modular learning ($P=.01$), independent learning competencies with virtual class and modular learning ($P=.001$)), and a highly significant difference in online communication competencies with virtual class and modular learning ($P=.000$)

This implies that in these areas, the students who preferred Virtual Classes over Modular Learning have higher competence. This goes to show that being able to engage with teachers and other students gives them opportunity to make collaborations that draw them to a shared experience space to construct and confirm meaning in the presence of everyone involved in the teaching and learning process and, thus, achieve meaningful educational outcomes as stated by Garrison et al. (1999).

Table 14 shows the data.

Table 14
LSD Results in the Online Learning Competence of Pre-service teachers as to Exposure to Online Engagements

Online Learning Competence	Position (I)	Position(J)	Mean Difference (I-J)	Sig.
Computer and technology competencies	Virtual Class	Modular Learning	.22493*	.013
Independent learning competencies	Virtual Class	Modular Learning	.29309*	.001
Online communication competencies	Virtual Class	Modular Learning	.28697**	.000

4. CONCLUSIONS

Based on the results, the following conclusions were drawn by the researcher.

1. The pre-service teachers have average skills in manipulating and operating digital technologies such as computers or mobile phones used in online learning. They may have developed their personal learning strategy to cope with the demands of their online courses. Moreover, they possess the ability to express ideas using L2 however, they may have difficulty in expressing everything they have in mind.

2. The type of device used by the pre-service teachers influences their online learning competence as those who use both a phone/tablet and a laptop/desktop have advanced competence in manipulating digital technologies such as computers and mobile phones used in online learning. Those who have Type 3 or stable internet connection have advanced competence in manipulating digital technologies such as computers and mobile phones used in online learning as well and those who prefer synchronous classes as their exposure to online engagements also have advanced competence level in independent learning. Furthermore, regardless of their year level and specialization, their online learning competence does not vary.

5. RECOMMENDATIONS

Based on the findings and conclusions made, the researcher recommends the following.

1. Although the online learning competence of the students who participated in this study is High, their overall skills in the competencies is average. Hence, it is recommended that a readiness for online learning should be measured before the semester begins. This will help the faculty and the dean identify and design the course content in such a way that it is tailored-fit for the students' style and preference of learning, competence in using computer and technology, ability to engage in self-

directed learning, and confidence to interact meaningfully with teachers and other students in a virtual classroom.

2. It appears that the more obvious issues in online learning such as internet connection, availability of digital technology tools, and learner autonomy are pervading in all facets of this learning modality. The researcher suggests that in designing course contents, the faculty, program heads, dean, and instructional development committee sit together to plan out the course structure and the method with which the learning materials are provided to the students. Online learning should not be the sole option but rather be just one among other options. Flexible learning may be considered so that course contents can be accessed by students even without the use of internet or a digital device.

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