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THE IMPACT OF DIGITAL TRANSFORMATION READINESS TOWARDS THE NEW NORMALCY IN THE EDUCATION SYSTEM

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Abstract

Due to digital technology advancements and the upheaval of the COVID-19 pandemic, universities have evolved their interest in integrating new communication technologies into the classroom, strengthening the institution's digital transformation. As a result, having mechanisms to depict these technologies in higher education has become indispensable. This investigation aimed to see if the university was inclined to digitally transform its procedures using technical skills, equipment capabilities, and a freeware learning platform. There were 121 professors and 3,069 scholars from various colleges who took part in the examination. An analysis model was designed and utilized at Taguig City University (TCU) as a case study to support the research. In Academic Year 2020-2021, the researchers collected data by disseminating an online questionnaire to professors and scholars. According to the statistical analysis of the collected data, professors and scholars agreed that they are moderately competent at using technical resources with higher operating systems. Participants are comfortable with and prefer to communicate with their professors and scholars using a freeware learning platform. With these findings, the university should experience even more dramatic changes, driven by the necessity to digitalize education and training procedures with professors who lack inherent technological talents for online instruction. In a world of digital transformation, disruptive technologies, and accelerated change, the university system must work hard to confound this circumstance to remain competitive and deliver high-quality teaching and learning approach. The debate and conclusion incorporate significant understandings that academic scholars can use to digitalize education at the earliest.

Keywords: COVID-19 pandemic, Digital transformation, Education sector, Taguig City University

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1. Introduction

Dealing with the improbable as expected would result in a new absence of management expertise in universities may not be assured of it. According to a study by Spyropoulou and Koutroukis (2021) that the immense strain imposed by this outbreak has led universities and colleges to experience a long time of disturbance or a colossal failure. The settings of social space, remote employment, and global alienation induced by the pandemic have precipitated a sequence of unstable situations for the universities, which may not anticipate in numerous formulated organizational methods. Despite the situation, many academic institutions started to intensify their digitalization program greatly due to the severe issue (Stracke et al., 2022). Alternatively, universities and colleges that throve infused digital capabilities gained a massive improvement as the abrupt proliferation of technology to citizenry has become unanticipated. Hence, they referred to as the "new normal" impelled diverse academic systems to work with a different perspective as matters may never return to the way they used to be (Rapanta et al., 2021).

A study by Goodyear (2022) explained that universities inevitably need to infuse technology into the most profound veins to frame a culture that could sustain as a shield for varied educational turbulences. Numerous educational institutions with a legacy setup are finding it rather challenging to maintain a similar experience with scholars. Contextually, the individual interface has become increasingly difficult to maintain, which encourages university officials to grasp the desired result of establishing a seamless experience in both offline and online interfaces with the students (Ali et al., 2021). Such orchestration of digital experience would make educational institutions leverage technology diffusion speed using digital assets while reassuring adequate resources directed to cultivate digital seeds within the university's cultural roots.

The impact on institution operations due to the pandemic was genuinely global and catastrophic. Forced lockdowns and social distancing measures triggered massive imbalances between what was demanded and what was not. Commercial platforms including manufacturing, retail, transportation, wholesale, and education were halted for months but are now easing out slowly with more significant complexities as every country has its unique educational and economic security measures to deal with (Shafi et al., 2020). On the other hand, various universities and colleges face tremendous pressure in managing cash flows, especially private universities and colleges, derived from imbalances in delays, disruptions in the recovery funnel, and many other unexpected social and economic turbulence (Hoque et al., 2022). Despite the negative sentiments, various educational institutions are trying to explore the new standard silver lining. Universities are impelled to invest and work around a digitally infused environment (Almazova et al., 2020), which allows counter-schools to expand their digital assets that are utilized to scale the provision and run it more efficiently than ever before. Therefore, it has become critical that universities consider data or information as the new creativity and bloodline of the education sector.

Further, academic leaders must understand the criticality of this novelty and allocate adequate digital resources that support in curriculum design decisions, enabling effective capacity planning and appropriate resource allocation for the different scenarios which could be in play for education (Rapanta et al., 2020). As highlighted before, universities must maintain high data-driven connectivity with students to accumulate a sense of deeper understanding to provide services at the right time with a personal touch. In turbulent times like pandemic, it is sensible for universities to deploy short-term actionable decisions while understanding the student behavior to create a lasting impact on the student.

2. Literature Review

2.1. Technology Skills

The education's strategic direction needs to combine greater digital collaboration with a 360-degree understanding of the university value chain and students' behavior (Leem, 2021). It is also important to acknowledge that institutions would consist of greater flexibility to scale up based on the different circumstances. Academic scholars and business experts made numerous resources, reform initiatives, and policy modifications to provide universities with technology.

Today, technology has a crucial effect on educational institutions. It can predict that universities and colleges will employ technology to strengthen the instruction of professors and scholars, yet obstacles to its adoption have been determined (Fernandes et al., 2020). Professionals' perspectives on technology usage and their abilities and understanding are internal leverages. If professors are without adequate technology training, they possess the requisite competencies. This element is identified by Winter et al. (2021) as a hurdle that can impede integrating technology, necessitating the implementation of appropriate measures.

Schlichter (2020) argued that assistance and support are also essential for universities and colleges. Teaching electronically without technology expertise requires professors to conform to untrained new educational paradigms and instruction delivery methods. According to a study by Francom et al. (2021), several professors were not adequately capable of teaching online. They had to exert significant effort to understand and prepare for virtual classrooms. The National Literacy Trust (Picton, 2019) discovered that most professors reinforced the use of technology but highlighted a lack of experience and competence as the most significant limitation. Studies indicate that professors' training is vital for effective blended learning (Akcil et al., 2021). Professors need to understand how and when to use technology, which, if used effectively, is an essential classroom resource (Hollebrands, 2020). Levels of technological proficiency and the ability to modify both the quantity and quality of the program are indispensable for triumph.

2.2. Equipment Capabilities

Today, practically every position in higher education involves a basic grasp of equipment, e.g., computers and laptops, and several occupations demand intermediate-to-advanced equipment capabilities. It can involve expertise in a software system, services or hardware. The understanding and capacity to use the equipment and electronic techniques mentioned will be capable of adapting to specific standards, maintaining data structures and improving technology capabilities (Voda et al., 2022). Having online learning is a vital qualification in digital educational environments. The massive growth in the use of communication and information technology (ICT) in teaching and learning settings is due to the extensive application of the internet and software in education (Dashtestani & Hojatpanah, 2020). Hedging strategies about computers and their solutions assist professors and scholars in increasing blended programs (Karagul et al., 2021).

In academic practice, professors' equipment capabilities are considered perspective, executive function dispositions that are spatially flexible to settings and expectations in such categories (Kaiser and Konig 2019). In present scenarios, the shutdown of universities and colleges attributable to the pandemic addressed professors, scholars, and close relatives with a completely new predicament (Huber & Helm, 2020). Professors should adjust to online teaching, asking them to use diverse equipment supplies or online equipment to resolve issues and adopt new pedagogical practices (Eickelmann & Gerick, 2020). The scholars highly encouraged that, as a priority, work should be acknowledged. In the long term of the planning process for gearing up online teaching with enough computer devices and digital connectivity, ICT training must be embedded to empower professors to obtain the necessary equipment capabilities required for online teaching (Subaveerapandiyan & Nandhakumar, 2021).

2.3. Freeware learning platform

Pei and Wu (2019) asserted that online learning platform has been a frequent method of instruction, attributed to the availability of technology and online infrastructure enhancement. Online learning has driven innovative methodology that enables academic institutions to encounter difficulties related to the viral crisis, the dearth of academic staff, the escalating number of students, and the unavailability of educational materials (Wang et al., 2021) due to time or distance constraints. Online learning can be used in teaching using websites, social networks, blog posts, discussion forums, digital articles, activities, and evaluations (Sturm & Quaynor, 2020). Some other virtual education infrastructures employ a Learning Management System (LMS) on Moodle (Rasmitadila et al., 2020) and Google Classroom (Subaveerapandiyan & Nandhakumar, 2021; Tauhidah et al., 2021), a platform that administers web-based learning.

Studies have indicated the benefits and drawbacks of online learning. As Lahti et al. (2014) and Sezer (2016) note, the advantages of digital education are time management and communication skills enhancement and faster knowledge integration. Conversely, the weakness of online learning is interpersonal restriction and operational problems (Fadlelola et al., 2019; Knipfer et al., 2019). Despite its limitation, digital learning is a good solution for higher learning to meet the severe demands of the COVID-19 pandemic. On the other hand, physical distancing resulting in the closing of universities is an increasing problem (Murphy, 2020; Scull et al., 2020), which seems to be the necessity of continual teaching and learning (Wang et al., 2021).

The present COVID-19 outbreak necessitates converting traditional classroom instruction to online learning (Cutri et al., 2020; Hill et al., 2020; Moorhouse, 2020). Emergency e-learning (Murphy, 2020) or emergency remote teaching (Bozkurt & Sharma, 2020; Kalloo et al., 2020) refers to the widespread use of online learning systems (Lederman, 2020; Verma et al., 2020). Reimers et al. (2020) published a transcribed range of parameters from the OECD that included professional development resources, curriculum resources, and instruments (Kahoot, Zoom, Google Classroom, Moodle, Microsoft Team, Seesaw, and others) to support the resumption of teaching and learning during the COVID-19 period. Those developing or improving an education continuity plan could include any of these resources directly into their plans or utilise them as a prototype for developing their respective online learning information

3. Data and Methodology

According to Chowdhury and Shil (2021), the research design is a blueprint or outline for research. Therefore, it can exercise overall flexibility among variables that could undermine the integrity of the research findings. As per the CHED Memo dated April 28, 2020, all universities and colleges researching the implementation of multiple learning styles for continuity were approached. This achievement will encourage Commission on Higher Education (CHED) to propose well-informed national policies to facilitate Higher Education Institutions (HEIs) acclimatizing normal as they prepare to return to school in Academic Year 2020-2021.

According to Table 1, the respondents were 121 professors and 3,069 TCU scholars who were chosen as the population for sampling based on their comprehension of the information required. For this study, the researcher utilized stratified random sampling to determine the number of respondents. Through Google Form Services, the respondents were assigned to their affiliated colleges. The purpose of the questionnaire was to examine whether TCU academic professors and scholars were ready to adopt a flexible learning method. Technology skills, ICT equipment capabilities, and familiarity with the freeware learning platform were all observed. The item statements must be agreed to (A), partly agreed to (SA), or disagreed to (DA).

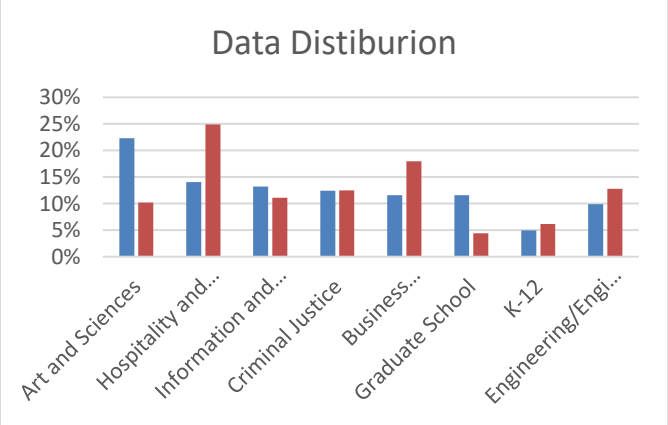

Fig.1 The distribution of the data based on the category

It is noticed in Fig 1 that the representative percentage of professors is higher than the corresponding percentage of scholars in three categories only which are Art and Sciences, Information and Communication Technology and Graduate School which indicates that the professor are not the majority in the other five categories. Fig 2 and Fig 3 represent the distributions of the professors and scholars among the selected categories.

College Name	Professors		Scholars	
	#	%	#	%
Art and Sciences	27	22%	312	10%
Hospitality and Tourism Management	17	14%	764	25%
Information and Communication Technology	16	13%	341	11%
Criminal Justice	15	12%	383	12%
Business Management	14	12%	551	18%
Graduate School	14	12%	136	4%
K-12	6	5%	189	6%
Engineering/Engineering Technology	12	10%	393	13%
Total	121		3,069	

Table 1. Sample Size

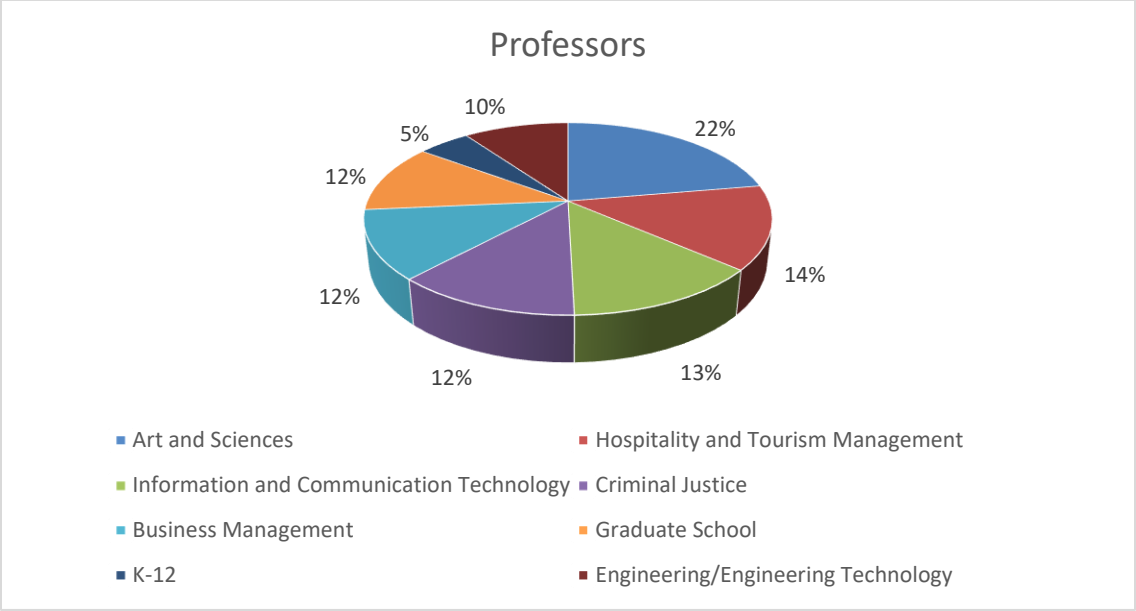

Fig.2 The distribution of the professors based on the category

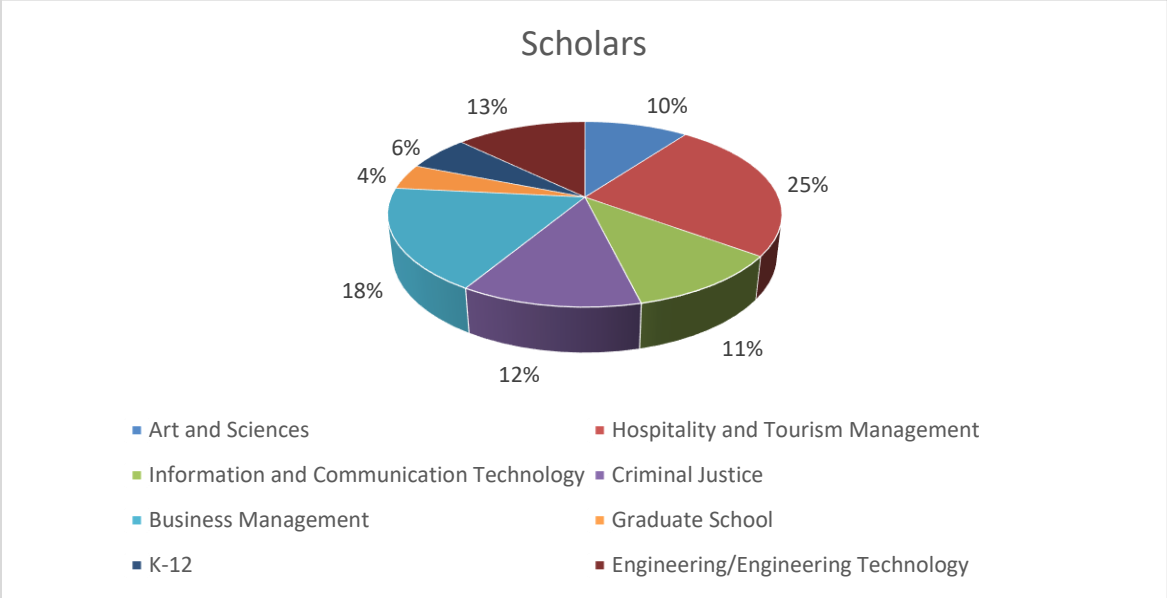

Fig.3 The distribution of the scholars based on the category

4. Data Analysis

The results obtained from the literature review and questionnaire analysis allow a better understanding of the respondents' responses on the assessment level of TCU readiness for digital transformation in terms of technological skills, equipment capabilities, and freeware learning platform.

4.1. Digital transformation readiness in terms of technology skills

Technology skills are the expertise and information of TCU professors and scholars require to complete specific activities. They are helpful and frequently include information technology. As a result, the researcher looked at the variable and the data on technical skills. Table 2 shows the readiness for digital transformation in terms of technology skills level. TCU professors and scholars rated themselves as Agree and Somewhat Agreed in all assertions, with 2.64 and 2.21. 1.77 weighted mean conflicts with the TCU scholars' interpretation of one statement, "Comfort-ability in installing software and altering configuration settings on the computer." With a weighted mean of 2.74, the statement "Good at using mobile" had the highest mean.

The pooled mean of 2.43 for the two groups of respondents yielded an interpretation of Agree. According to the data, TCU professors and scholars agree that the university is ready for digital transformation in technical skills. Interaction and task completion using computer-based technologies and other associated technologies, such as a mobile device, will provide a quality teaching and learning approach, particularly during a pandemic. ICT specialists feel that, alongside generic skills, technological skills are already necessary for today's information society and appear to be critical to people's future life satisfaction. Academic researchers discovered that critical thinking, problem-solving, communication, technology abilities, and age and money positively impacted life satisfaction in the twenty-first century (Leelakulthanit, 2018)

Statement	Professors		Scholars		Total	
	X	VI	X	VI	X	VI
Good in the use of computer/laptop	2.81	A	2.25	SA	2.53	A
Good at using mobile	2.81	A	2.66	A	2.74	A
Comfort-ability on surfing the internet	2.69	A	2.33	SA	2.51	A
Comfort-ability in conducting searches, setting bookmarks and downloading files	2.70	A	2.24	SA	2.47	A
Comfort-ability in installing software and changing configuration settings on computer	2.26	SA	1.77	DA	2.02	SA
Someone can help if I have computer problems	2.58	A	1.99	SA	2.29	SA
Overall Mean	2.64	A	2.21	SA	2.43	A

Note: A=Agree (2:34-3.00); SA=Somewhat Agree (1.67-2.33); DA=Disagree (1.00-1.66)

Table 2. Digital transformation readiness in terms of technology skills

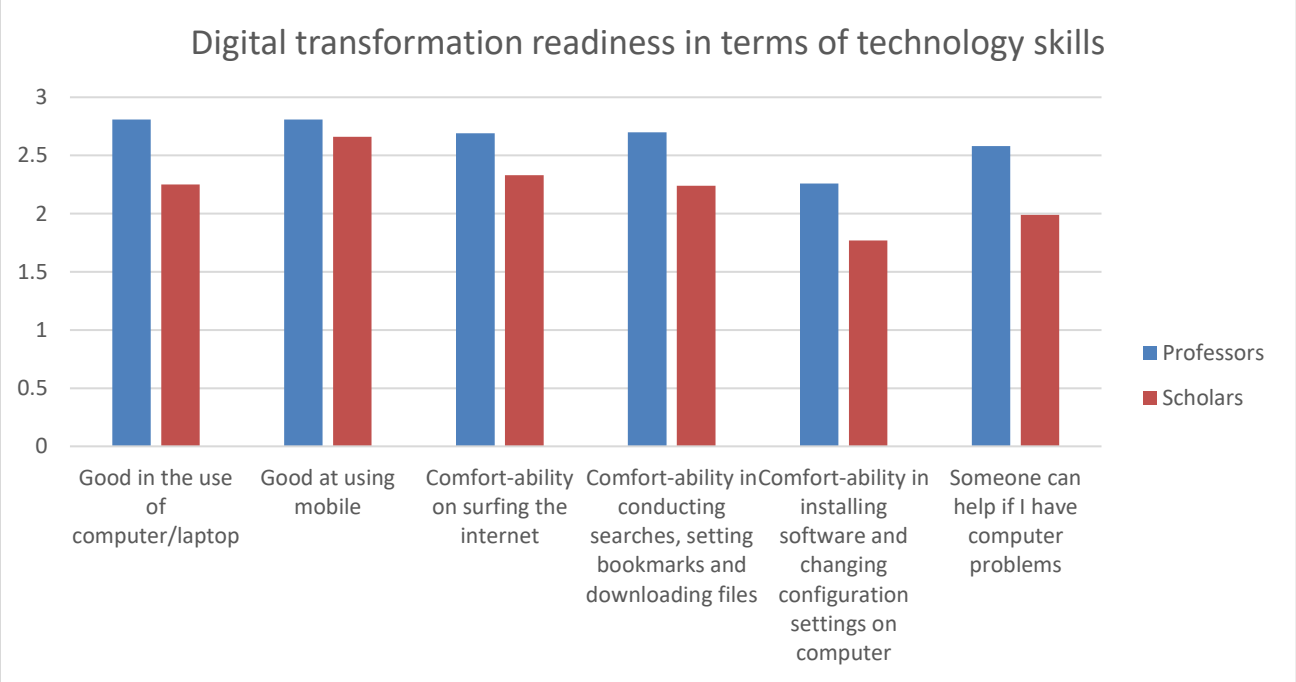

Fig.4 Digital transformation readiness in terms of technology skills

Regression Statistics	
Multiple R	0.868495025
R Square	0.754283608
Adjusted R Square	0.692854511
Standard Error	0.114086818
Observations	6

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.159820125	0.159820125	12.27893025	0.024803243
Residual	4	0.052063208	0.013015802		
Total	5	0.211883333			

	Coefficients	Standard Error	t Stat	P-value
Intercept	1.342858382	0.373565545	3.594706206	0.022865695
X Variable 1	0.588583815	0.167968579	3.504130456	0.024803243
	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.305674154	2.380042609	0.305674154	2.380042609
X Variable 1	0.122228275	1.054939355	0.122228275	1.054939355

Regression Analysis for the technology skills.

- Multiple R: 0.87. which is the multiple correlation between Professors and Scholars. It reflects strong correlation (87%) between the two groups.
- R Square: 0.754. which is the coefficient of determination. It is the proportion of the variance in the response variable that can be explained by the explanatory variables. In our case 75.4% of the variation in the scholar response can be explained by the professor responseStandard error: 0.11. This is the average distance that the scholars' response fall from the regression line. In our case, the scholars' response falls an average of 1.1 units from the regression line.
- F: 12.279. is the overall F statistic for the regression model.
- Significance F: 0.024. is the p-value associated with the overall F statistic. It tells us whether or not the regression model as a whole is statistically significant. In our case the p-value is less than 0.05, which indicates that the scholars' responses have a statistically significant association with professor responses.
- Coefficients: for each expected increase by 0.58 in the professor response, it will be followed by 1.3 increment in the scholar response.
- Hence the coefficients from the output of the model to create the following estimated regression equation: Scholar response = 1.3 + 0.58* the professor response
- A one-way ANOVA uses the following null and alternative hypotheses:

  H0: The two-group means are equal.

  HA: The two-group means are not equal.

  Since the p-value is less than $\alpha = .05$, we reject the null hypothesis of the one-way ANOVA and conclude that we have sufficient evidence to say that not all of the group means are equal.

4.2. Digital transformation readiness in terms of equipment capabilities

Statement	Professors		Scholars		Total	
	X	VI	X	VI	X	VI
My computer reliably runs the Mac OS 10.8 or Windows 7 PRO (or higher) operating system	2.57	A	1.66	DA	2.12	SA
My mobile reliably runs the android, iOS or Windows Mobile operating system	2.71	A	2.46	A	2.59	A
I have word processing and spreadsheet software such as Microsoft Word and Excel	2.77	A	2.30	SA	2.54	A
I have broadband access to the internet with a fast and reliable connection	2.13	SA	1.65	DA	1.89	SA
My primary access to internet is pre-paid data plan	2.16	SA	2.06	SA	2.11	SA
I have headphones, or speakers and a microphone to use if a class has a video conference	2.36	A	1.98	SA	2.17	SA
Overall Mean	2.45	A	2.02	SA	2.24	SA

Note: A=Agree (2:34-3.00); SA=Somewhat Agree (1.67-2.33); DA=Disagree (1.00-1.66)

Table 3. Digital transformation readiness in terms of equipment capabilities

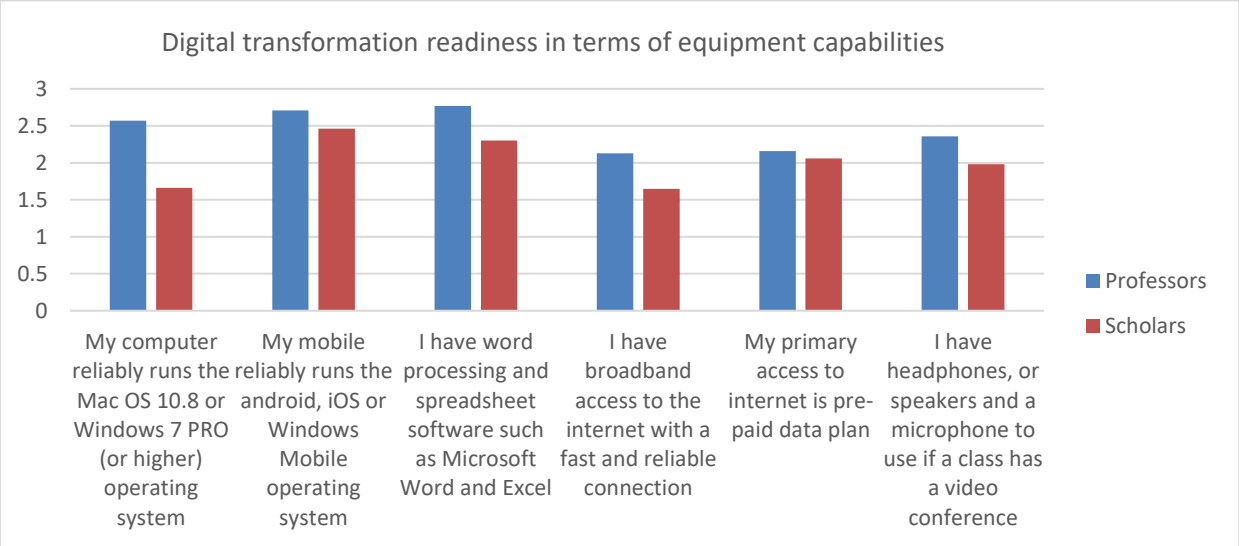

Fig.5 Digital transformation readiness in terms of equipment capabilities

Working in universities necessitates a specific skill set and the ability to operate certain types of equipment common to many TCU departments. However, developing those skills is only the first step in making student learning easier. As a result, the researcher looked into the variable and the data on equipment capabilities. Table 3 shows the preparation for digital transformation in terms of equipment

capabilities. Agree and Somewhat Agree are the two groupings of respondents, as seen by their overall means of 2.45 and 2.02. All claims were rated as Agree or Somewhat Agree by TCU professors, with a mean standard of 2.45. "My computer dependably runs the Mac OS 10.8 or Windows 7 PRO (or above) operating system" and "I have broadband access to the internet with a fast and dependable connection" were both rated as disagreeing by the scholars, with a weighted mean of 1.66 and 1.65, respectively. With a weighted mean of 2.59, the statement "My mobile consistently runs the android, iOS, or Windows Mobile operating system" has the highest mean standard.

Somewhat Agree was the interpretation of the pooled mean of 2.24 for the two groups of respondents. Most TCU professors and scholars have gadgets that run on cutting-edge operating systems and technology. During the COVID-19 epidemic, for example, the city administration of Taguig provided 8,700 tablet computers to scholars and academics to aid in distance learning. It would also allow for personal development outside of the classroom. The respondents might use gadgets for study, self-paced virtual learning, or even look for part-time work (Hallare, 2020). In addition, professors and academic scholars who have ubiquitous access to information and communication capacities, according to Chanias (2017), are significantly affected by digital technology (e.g., using social media on a mobile device). They become active participants in an organization's dialogue with its stakeholders when they use these tools (Yeow et al., 2017).

Regression Statistics	
Multiple R	0.598545739
R Square	0.358257002
Adjusted R Square	0.197821252
Standard Error	0.246587001
Observations	6

	Df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.135779404	0.135779404	2.233024765	0.209397992
Residual	4	0.243220596	0.060805149		
Total	5	0.379			

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	1.439498169	0.68367578	2.105527518	0.103008741
X Variable 1	0.500661518	0.335040603	1.494330875	0.209397992
	Lower 95%	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.4586901	3.337686444	-0.4586901	3.337686444
X Variable 1	-0.42956033	1.430883361	-0.42956033	1.430883361

Regression Analysis for equipment capabilities

- Multiple R: 0.598. which is the multiple correlation between Professors and Scholars. It reflects medium correlation (60%) between the two groups.
- R Square: 0.358. which is the coefficient of determination. It is the proportion of the variance in the response variable that can be explained by the explanatory variables. In our case only 35.8% of the variation in the scholar response can be explained by the professor response.
- Standard error: 0.24. This is the average distance that the scholars' response fall from the regression line. In our case, the scholars' response falls an average of 2.4 units from the regression line.
- F: 2.233. is the overall F statistic for the regression model.

- Significance F: 2.23. 0.21 is the p-value associated with the overall F statistic. It tells us whether or not the regression model as a whole is statistically significant. In our case the p-value is greater than 0.05, which indicates that the scholars' responses have NO statistically significant association with professor responses.
- Coefficients: for each expected increase by 0.5 in the professor response, it will be followed by 1.4 increment in the scholar response.
- Hence the coefficients from the output of the model to create the following estimated regression equation: Scholar response = 1.4 + 0.5* the professor response
- A one-way ANOVA uses the following null and alternative hypotheses:

  H0: The two-group means are equal.

  HA: The two-group means are not equal.

  Since the p-value is greater than $\alpha = .05$, we accept the null hypothesis of the one-way ANOVA and conclude that we have sufficient evidence to say that the two-group means are equal.

4.3 Digital transformation readiness in terms of freeware learning platform

Learning Platform	Professors		Scholars		Total	
	X	VI	X	VI	X	VI
Google Classroom	2.49	A	2.42	A	2.46	A
Edmodo	1.84	SA	1.59	DA	1.72	SA
Schoology	1.75	SA	1.59	DA	1.67	SA
Moodle	1.77	SA	1.45	DA	1.61	DA
Overall Mean	1.96	SA	1.76	SA	1.86	SA

Note: A=Agree (2:34-3.00); SA=Somewhat Agree (1.67-2.33); DA=Disagree (1.00-1.66)

Table 4. Digital transformation readiness in terms of the freeware learning platform

After addressing technological skills and equipment capabilities, TCU will need to consider the learning platform required to fulfil its aims and objectives. A learning platform (or eLearning platform) is an online platform that gives support and technologies to TCU learners and administrators to help facilitate the quality and management of learning and teaching efforts. As a result, the researcher looked at the variable and the data from the learning platform. Table 4 shows the freeware learning platforms' readiness for digital transformation. TCU academics generally agreed with their overall mean of 1.96 in all claims. However, TCU scholars' perceptions of three (3) propositions, "Edmodo, Schoology, and Moodle," with weighted means of 1.59, 1.59, and 1.45, disagree.

The statement "Google Classroom" had the highest mean, 2.46 weighted mean, and was read as Agree. TCU professors and scholars agreed that freeware learning platforms are ready for digital transformation, according to the findings. One hundred thirteen professors, or 93.5 per cent, agreed that they utilize Google Classroom to communicate with their students regarding educational topics. Despite this, just eight scholars are apprehensive about calling their instructors, with a percentage of 6.6. Iivari et al. (2020) investigate the digital revolution triggered by the COVID-19 epidemic in primary education for the young generation. Occasionally, professors and researchers have been using Google Classroom, an online classroom environment. The transition to online teaching went smoothly because the lecturer was experienced with various online venues and possessed solid technological skills.

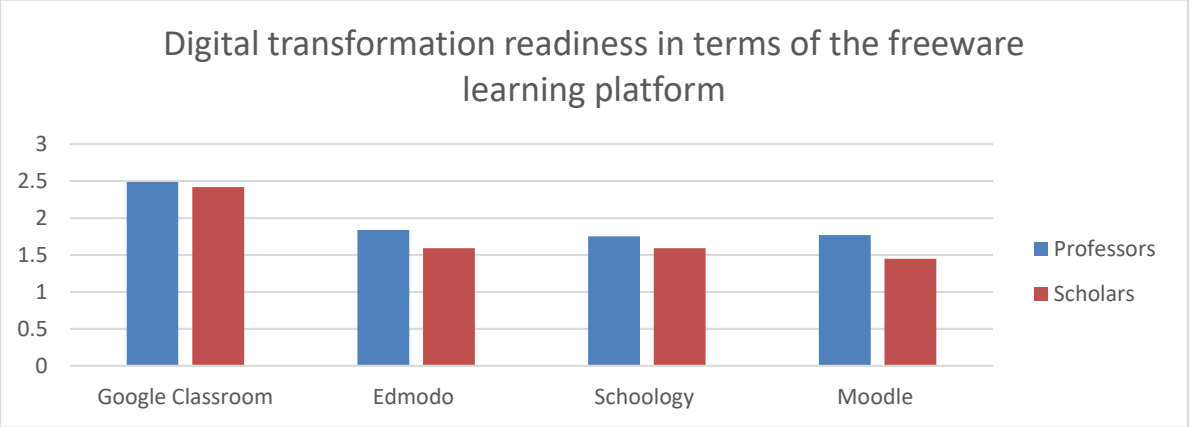

Fig.6 Digital transformation readiness in terms of the freeware learning platform

Regression Statistics	
Multiple R	0.987914935
R Square	0.975975919
Adjusted R Square	0.963963878
Standard Error	0.067158179
Observations	4

ANOVA					
	Df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.366454558	0.366454558	81.24980159	0.012085065
Residual	2	0.009020442	0.004510221		
Total	3	0.375475			

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	0.572846601	0.157782914	3.630599701	0.068196062
X Variable 1	0.788455829	0.087471427	9.013867183	0.012085065
	Lower 95%	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.10603849	1.251731687	-0.10603849	1.251731687
X Variable 1	0.412096653	1.164815005	0.412096653	1.164815005

Regression Analysis for the freeware learning platform

- Multiple R: 0.99. which is the multiple correlation between Professors and Scholars. It reflects perfect correlation (99%) between the two groups.
- R Square: 0.976. which is the coefficient of determination. It is the proportion of the variance in the response variable that can be explained by the explanatory variables. In our case 97.6% of the variation in the scholar response can be explained by the professor response.
- Standard error: 0.67. This is the average distance that the scholars' response fall from the regression line. In our case, the scholars response fall an average of 6.7 units from the regression line.

- F: 81.2498. is the overall F statistic for the regression model.
- Significance F: 0.012. is the p-value associated with the overall F statistic. It tells us whether or not the regression model as a whole is statistically significant. In our case the p-value is less than 0.05, which indicates that the scholars' responses have a statistically significant association with professor responses.

- Coefficients: for each expected increase by 0.79 in the professor response, it will be followed by 0.57 increment in the scholar response.
- Hence the coefficients from the output of the model to create the following estimated regression equation: Scholar response = 0.57 + 0.79* the professor response
- A one-way ANOVA uses the following null and alternative hypotheses:
  H0: The two-group means are equal.
  HA: The two-group means are not equal. Since the p-value is less than $\alpha = .05$, we reject the null hypothesis of the one-way ANOVA and conclude that we have sufficient evidence to say that not all of the group means are equal.

4.4. Flexible learning modality

Variables	Professors		Scholars	
	X	VI	X	VI
Technology skills	2.64	A	2.21	SA
Equipment capabilities	2.45	A	2.02	SA
Freeware learning platform	1.96	SA	1.76	SA

Note: A=Agree (2:34-3.00); SA=Somewhat Agree (1.67-2.33); DA=Disagree (1.00-1.66)
Table 5. Flexible learning modality

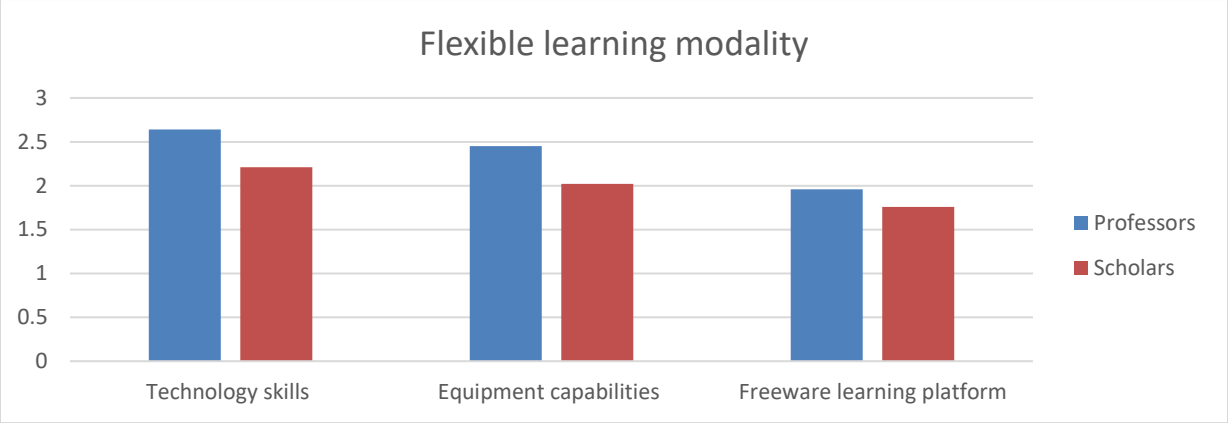

Fig.7 Flexible learning modality

Table 5 depicts the flexible learning model used to measure digital transformation readiness in the education sector. According to indicators, technology abilities have the most excellent mean scores of 2.64 and 2.21, respectively, among the three (3) variables. The statement "Technology Skills" had the highest mean, 2.43 weighted mean, and was read as Agree. The findings suggest that during the COVID-19 epidemic, TCU professors and scholars possessed technical capabilities in employing digital equipment such as computers, laptops, and even mobile phones in the teaching-learning process in higher education. In the face of the COVID-19 epidemic, Mishra et al. (2020) attempt to highlight the importance of online teaching-learning in education. In an ever-changing educational landscape, existing educational institution resources transform formal education into online education using virtual classrooms and other critical online tools. To deal with the complexity of online education, the researchers determined that establishing a multimodal method to meet course content objectives for improved learning outcomes is a superior concept.

Regression Statistics	
Multiple R	0.987252749
R Square	0.974667991
Adjusted R Square	0.949335981
Standard Error	0.078973038
Observations	3

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.239963259	0.239963259	38.47574737	0.101757354
Residual	1	0.006236741	0.006236741		
Total	2	0.2462			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	
Intercept	-0.71151208	0.495664383	-1.43547148	0.387360313	
X Variable 1	1.533311561	0.247193404	6.202882183	0.101757354	
	Lower 95%	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*	
Intercept	-7.00952521	5.586501048	-7.00952521	5.586501048	
X Variable 1	-1.60757844	4.674201561	-1.60757844	4.674201561	

Regression Analysis for the Flexible learning modality

- Multiple R: 0.99. which is the multiple correlation between Professors and Scholars. It reflects perfect correlation (99%) between the two groups.
- R Square: 0.975. which is the coefficient of determination. It is the proportion of the variance in the response variable that can be explained by the explanatory variables. In our case 97.5% of the variation in the scholar response can be explained by the professor response.
- Standard error: 0.079. This is the average distance that the scholars' response fall from the regression line. In our case, the scholars' response fall an average of 0.7 units from the regression line.
- F: 38.476. is the overall F statistic for the regression model.
- Significance F: 0.102. is the p-value associated with the overall F statistic. It tells us whether or not the regression model as a whole is statistically significant. In our case the p-value is greater than 0.05, which indicates that the scholars' responses have NO statistically significant association with professor responses.
- Coefficients: for each expected decrease by -0.7 in the professor response, it will be followed by 1.5 increment in the scholar response.
- Hence the coefficients from the output of the model to create the following estimated regression equation: Scholar response = -0.7 + 1.5* the professor response
- A one-way ANOVA uses the following null and alternative hypotheses:
  H0: The two-group means are equal.
  HA: The two-group means are not equal.

  Since the p-value is greater than $\alpha = .05$, we accept the null hypothesis of the one-way ANOVA and conclude that we have sufficient evidence to say that the two-group means are equal.

5. Results and Discussion

UNESCO (2017) stated that around 264 million students are not enrolled, and this epidemic exacerbated the situation. An increase in online instruction is taking place as the COVID-19 pandemic spreads since shutting down schools and institutions for an indeterminate period is the only alternative available (Martinez, 2020). Therefore, the moment has come to rethink, overhaul, and reinvent our education system in light of the exceptional demands of the present circumstance. Naturally, informal and non-formal education is impacted as well. Yet, there is a well-established premise that no educational strategy can replace formal education's apex owing to the direct interaction between instructor and student. In the wake of the COVID-19 crisis, online education witnessed a pedagogical change from the conventional method to the new teaching-learning approach. Also, from the classroom to Zoom, from the personal to the virtual, and from seminars to webinars.

E-learning, remote education, and similitude courses were categorized as forms of non-formal education. Nevertheless, if the conditions continue to exist for an extended period, they will progressively supplant the conventional educational system. Neo, Classtime, Coursera, Google Classroom, Skillshare, Edmodo, G Suite, Schoology, Moodle, and many more are the most popular online communication platforms that change the destination and direction of the entire education system across the world in the circumstances that exist after COVID-19 situations (Dash et al., 2021). As proposed by Illich in 1971, a de-schooling society appears to be pertinent in light of the current scenario, which seeks to shield our children from the conventional formal education system and allow them to develop their natural inquisitiveness.

Lederman (2020) correctly noted that as a result of the COVID-19 dilemma, both professors and scholars feel driven to embrace the digital academic experience as the culmination of the online teaching-learning process. With the help of digital intelligence (DQ Institute, 2019), professors may adapt to the digital capabilities of scholars on the verge of cyber risk and provide them with educational possibilities to thrive in future endeavors, particularly in this epidemic where scholars are fully reliant on online learning. The pandemic is disrupting life (EdSource, 2020), which posed a persistent danger to our educational institutions from kindergarten to tertiary level and progressively hampered teaching and learning. In addition to their charity endeavors, some individuals intended to profit from their entrepreneurial abilities.

Rojas II (2021) claims that a flexible learning approach is a new norm. The researcher refers to the mix of diverse instructional strategies, including online platforms and digital or printed modules. Under this new approach, universities and colleges will implement additional learning and teaching methods tailored to their specific circumstances. For illustration, more prepared colleges will press ahead with all the online classes. In contrast, some may ensure their students return at different times and undertake more synchronous vs. asynchronous learning. While the pandemic continues to ravage the world, TCU professors and researchers are eager to incorporate flexible learning methods into their professional practices (Dayagbil et al., 2021).

It is noticed that, there is a high positive correlation between the professors' responses and the scholars' responses in "technology skills", "freeware learning platform" and "Flexible learning modality", however the relation is medium in the third direction "equipment capabilities".

In addition, according to the regression analysis, it is noticed that the mean of the two-groups is different in both "technology skills" and "freeware learning platform", however they have almost the same mean in both "equipment capabilities" and "Flexible learning modality".

6. Conclusion

Most academics and scholars are proficient with computers/laptops, mobile devices, and Internet browsing. The vast majority of professors are adept at doing searches, creating bookmarks, and downloading files. In contrast, scholars are pleased with these technological talents. Regarding installing software and modifying configuration settings on their computers, professors can do it themselves and agree that there is someone who can assist them with computer issues. However, scholars disagree.

In terms of ICT equipment, scholars have Mac OS 10.8 or Windows 7 Pro (or higher) PCs that work reliably. Respondents with mobile devices compatible with the system are in the majority. Professors and scholars exhibited similar proficiency in terms of word processing and spreadsheet software (such as Microsoft Word and Excel). Prepaid data plans are an effective method of internet access for academics in

broadband access, which provides a fast and dependable connection. A microphone and headphones are available in case of a video conference in the classroom.

Google classroom is a well-known freeware learning service among scholars and professors. While other learning systems, such as Edmodo, Schoology, and Moodle, are not on the respondents' attention. McGinnis (2021) stated that these mixed learning media facilities for the scope of education have transformed how people interact, collaborate, and save information online. The paperless sharing, examination, and digital collaboration made possible by the education-friendly platform are now available to TCU academic professors and scholars.

7. Recommendations

When it comes to teaching with online resources, TCU plans to offer faculty development classes to help them become more proficient with the latest technologies. TCU's administration sought a website domain from the management system department to introduce the university's online admissions and registration process. After becoming familiar with the freeware learning portal, the College of Information and Communication Technology department and the Management System department collaborated to establish the faculty capability program and courseware development initiatives. To meet CHED norms and requirements, all colleges and their program coordinators should assess the readiness of their professors and scholars to use online technologies and design modules or learning kits based on their syllabi.

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