Teachers Performance, Technology, and 21st Century Skills: A Basis for a Faculty Development Program

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The purpose of this study explores the potential relationship between teachers' performance, technology, and 21st-century skills. To achieve the motive of the study, the descriptive sequential exploratory research design was used. Fifty teachers' from Rodolfo V. Feliciano Memorial High School in the School Year 2018-2019 served as the respondents of the study. Outcomes discovered that there is a highly significant relationship between 21st-century skills and technology skills of the teacher respondents. Based on the discoveries, it is recommended that teachers must use technology efficiently for the welfare of students, teachers, and society, Improving the effectiveness of the 21st-century capabilities of educators and systems has to contain responsibility for both events and require close attention to a couple of measures. To assist our teachers' technology competencies to develop to a high level, administrators ought to provide education incorporating modalities that are relevant to the times.

Key words: *Performance, Technology skills, 21st-Century Skills, Teachers.*

Introduction

Teachers play an important role in cultivating the worth of coaching and information progression. Good educators are vital to nurturing learner attainment. Therefore, educator ranks must be improved primarily within the many educational reform efforts toward excellent education. Educators usually use the term capability, the perceived abilities, talents, and know-how of faculty leaders, teachers, faculties, and staff—most usually when describing the "capacity" of a character or college to execute or accomplish something specific, such as

leading a college-improvement attempt or coaching more efficaciously (Marco Aurelio Navarro-Leal & Zaira Navarrete-Cazales, 2018).

Technology capabilities are the capability to correctly use Era to access, evaluate, integrate, create and communicate statistics to beautify the gaining knowledge of the process through problem-fixing and vital thinking. Furthermore, technology skills are computer skills that one has to possess to make use of generation efficiently in any educational or non-academic setting (IGI Global, 2019).

On the other hand, "21st-century skills" is typically used to refer to certain core skills together with collaboration, virtual literacy, important thinking, and problem-fixing that advocates trust in schools which need to help train students to thrive in the contemporary world (Kamal, 2019; Karaman and Efilti, 2019; Kiral, 2019; Kılıçoğlu, 2019; Hanımoğlu, 2019; Ogundele, et.al 2019; Tong and Baslom, 2019; Rich, 2010).

Also, 21st-century teaching means teaching as one has constantly taught, but with today's gear and technology. It means making use of everything vital in the modern-day world so that college students are be able to live and prosper in a brand new economy, as well as having the potential to guide students and to put them together for the future. 21st-century skills are categorized, and determined otherwise from character to individual, place to place, or faculty to college, the time period does mirror a general—if really loose and shifting—consensus (Mokhtar, 2017;Riyanti, 2018; Puteri, 2018; Gu, 2018; Wang and Yang, 2018; Caifen, et. al. 2018; Obi and Okekeokosisi, 2018; Sandy, 2018; Saeed and Kayani, 2018; Briones, 2019).

Finally, Leonard, Z. (2016) posted the 4Cs for 21st-Century talents inside the classroom. The 4Cs indexed are communication, collaboration, vital thinking, and creativity. All four of these items are essential in the 21st-Century classroom. These might be the 4Cs for any century classroom as all of these skills are timeless and quite valued, not handiest in the study room but in all professions.

Communication is sharing thoughts, questions, ideas, and solutions. In the technological age, it is much easier and, at the same time, more difficult to communicate. Technology has supplied us with more convenient methods to communicate, but now and again the numerous ways can turn out to be overwhelming. Collaboration is about running together to reach a purpose and placing talent, expertise, and smarts to work. Just like with communication, the Era has made collaboration easier (Fibriasari, 2019; Alshammari, 2019; Nyamekye and Anapey, 2019).

Critical thinking involves issues looked at in a new way and linking and mastering across topics and disciplines. Creativity is trying new approaches to get matters done, including innovation and invention. The 21st-century is an amazing time to be a creative way using Era.

Therefore, the study aims to identify the teachers' performance, technology, and 21st-century skills at Rodolfo V. Feliciano Memorial High School in the School Year 2018-2019, in the Division of Pampanga. This is viewed as a basis for teacher development programs to provide knowledge and skills that will influence students in the community and to become productive citizens of society.

Objectives

This study focused on the correlation of the teachers' level of capability, technology, and 21st-century skills among teachers at Rodolfo V. Feliciano Memorial High School. Specifically, it sought to answer the following question.

1.   How may the teachers' performance be described in terms of:
1.1   content Knowledge and Pedagogy
1.2   learning Environment and Diversity of Learners
1.3   curriculum and Planning
1.4   assessment and Reporting?
2.   How may the technology skills of the teachers be described in terms of:
2.1   operation;
2.2   communication application;
2.3   professional development; and
2.4   device utilisation?
3.   How may the 21st-century skills of the teachers be described in terms of:
3.1   critical thinking;
3.2   communication;
3.3   collaboration; and
3.4   creativity?
4.   Is there a significant relationship between the teachers' capability level and priority, technology, and 21st-century skills?
5.   What program may be proposed to enhance the teachers' performance, technology, and 21st-century skills?

Hypotheses

This study will be guided by the following hypothesis.

There is no significant relationship among the teachers' performance, technology, and 21st-century skills.

Research Methodology

This made use of the descriptive sequential explanatory studies layout. The explanatory sequential mixed methods' design involves the method of first amassing quantitative information to explore a phenomenon and then collecting qualitative information to provide an explanation for relationships found in the quantitative information (NV Ivankova, 2006).

Purposive sampling was adopted to determine the sample size of the respondents. This sampling technique was used since the researcher only included teachers of Rodolfo V. Feliciano Memorial High School. Part I included teachers' performance adapted from the Result Based-Performance Management System (2019). Part II of the survey focused on the technology skills of teachers. This part was adopted from Technology Proficiency of Administrators, Teachers and Teacher Librarians (2013). Part III of the survey contained 21st-century skills. This portion was adopted from the ISSA's Definition of Quality Pedagogy, Competent Educators for the 21st-century (2009).

Results and Discussion

Table 1 presents the capability level and priority development among teachers' performance and are measured by four indicators, namely, contents knowledge and pedagogy, learning environment and the diversity of learners, curriculum and planning, assessment and reporting. In this table, it can be noted that the average weighted mean of teachers' capability was 3.10 with a descriptive rating of *Often*. The item priority development of the teachers' pointed out that the teachers' had an average, weighted mean of 3.06 with a descriptive rating of *Often*.

Table 1: Descriptive Ratings on the Teachers Performance

Capability Level and Priority Development		Weighted Mean		
	Capability Level	Descriptive Rating	Priority Development	Descriptive Rating
1. Content Knowledge & Pedagogy	3.09	Often	3.20	Often
2. Learning Environment and Diversity of Learners	3.11	Often	3.04	Often
3. Curriculum	3.05	Often	3.00	Often
4. Assessment and Reporting	3.13	Often	3.00	Often
Average Weighted Mean	**3.10**	**Often**	**3.06**	**Often**

Table 2 presents the teachers' respondents' assessment of technical skills. As perceived on the table, the respondents are equipped with the operational and common application with a mean

of 3.71 and 3.59 respectively with a descriptive rating of *Always*. Meanwhile, the teachers' professional development reached a mean of 3.46 and the device utilization mean was 3.19 equal to the descriptive rating of *Often*. Generally, the teacher's technology skills as assessed having an average, weighted mean of 3.49 which is *Always*, an implication that teachers are well versed when it comes to technology operations and common application. The 21st-century technology skills provide instructors and students to get entry to variety a few educational resources that inspire creativity, crucial thinking, communication, and collaboration Lohesh, L. (2015).

Based on the teacher interview technology competencies, these provide instructors and students to get entry to quite a few educational resources that encourage creativity, essential thinking, communication, and collaboration. They promote inclusion and the development of digital literacy competencies. It extends studying past the text – and beyond the classroom walls.

Table 2: Descriptive Ratings on the Teachers Technology Skills

Technology Skills	Weighted Mean	Descriptive Rating
1. Operation	3.71	Always
2. Common Application	3.59	Always
3. Professional Development	3.46	Often
4. Device Utilization	3.19	Often
Average Weighted Mean	**3.49**	**Often**

As recognized in this study, the model of the 21st-century skills has taken various modifications in the educational setting. Since knowledge of the people was growing, trial on the expansion of abilities was also coercing the teachers, mainly those in the basic education level which is associated with the replies shown in table 3. The 21st-century skills of the teachers were measured by four identified indicators, namely critical thinking, communication, collaboration, and creativity. It can be noted that the communication skills was seen with a mean of 3.77 with a descriptive rating of *Always*, closely followed by critical thinking skills with a mean of 3.72 with a descriptive rating of *Always*. On the other hand, creativity and collaborative establish a mean of 3.58 and 3.48 respectively with a descriptive rating *Often.* This implies that critical thinking and communication skills are recognized by teachers as vital skills required for mastery of subjects. Collaboration and creativity benefit in more condensed production processes. According to teachercertification.org (2017) to educate in the 21st century, teachers need to foster and uphold the student's curiosity in the material by showing how this knowledge

relates to the real world. They must also try to surge their student's curiosity, which will help them become lifelong learners.

Based on teachers' interviews: A 21st-century training is about giving college students the abilities they want to achieve in this new global world and assisting them to grow the self-belief to practice those abilities. With so much information ready to be had with them, twenty-first-century skills focus more on making the experience of that information and sharing and the usage of it in smart ways.

Table 3: Descriptive Ratings on the Teachers 21st Century Skills

21st Century Skills	Weighted Mean	Descriptive Rating
1. Critical Thinking	3.72	Always
2. Communication	3.77	Always
3. Collaboration	3.48	Often
4. Creativity	3.58	Often
Average Weighted Mean	**3.64**	**Always**

With the computed value of r =.000, there is a highly significant relationship between 21st-century skills and technology skills of the teachers. This proves that enhancing teachers' 21st century and technology skills will improve teachers' and students' classroom collaborative experience. Technology provides teachers and students with access to numerous educational resources that encourage creativity, important thinking, communication, and collaboration (KnowingTech, 2015).

According to the teachers' interview, the 21st century and technology skills are noticeably significant. They promote inclusion and the development of digital literacy skills, extend and gain knowledge beyond the text – and beyond the study room walls, and ultimately expose college students and teachers to new online international communities.

Table 4: Significant Relationship

	Teachers Capability level and Priority Development	Technology Skills	21st Century Skills

Teachers Capability level and Priority Development
        Sig. (2-tailed)
        N
	1	.103
		.490
		47
			.023
			.878
			47

Technology Skills Sig. (2-tailed)	.103 .490	1	.526 **.000 highly**

N	47	47	**Sig.** 47
21ˢᵗ Century Skills	.2.23	.526	1
Sig. (2-tailed)	.878	**.000 highly Sig.**	
N	47	47	47

Conclusion

1. The teachers' performance overall average, weighted mean, in the level of capability and priority development was 3.06 with a descriptive rating of *often.*
2. The teachers' respondents were *always* employed operational and given a common application in technology skills. Moreover, respondents *often* experience professional development and device utilization. Generally, teachers' technology skills, having an average, the weighted mean was 3.49 with a descriptive rating of *always.*
3. The respondents always describe 21st-century skills in critical thinking and communication, while often in collaboration, and creativity. This implies that critical thinking and communication skills are recognized by teachers as vital skills required for mastery of subjects and explains why collaboration and creativity benefit in more condensed production processes.
4. There is a highly significant relationship between 21st-century skills and technology skills of the teacher respondents.
5. What program enhancement may be proposed for teachers?

Recommendation

1. Technology is a multipurpose and valued device for coaching and getting to know an appropriate a way of life. The most widespread aspect is that teachers are prepared to use these technologies correctly. Teachers must use technology efficiently for the welfare of students, teachers, and society.
2. Improving the effectiveness of the 21st-century capabilities of educators and systems has to contain responsibility for both events and require close attention to a couple of measures.
3. To assist our teachers' technology competencies to develop to a high level, college administrators ought to provide education incorporating modalities that are relevant to the times - operation, commonplace application, professional development, and device utilisation, and also engage with 21st-century abilities (crucial thinking, communication, collaboration, and creativity). In other words, we want to put the teachers' in schooling that allows them to develop from experience.

Proposed Program Training Program for Teachers' 21st Century and Technology Skills

Teachers are best known for the role of educating the students that are placed in their care. Beyond that, teachers serve many other roles in the classroom. Teachers set the tone of their classrooms, build a warm environment, mentor and nurture students, become role models, and listen and look for signs of trouble. This is the proposed training program for teachers' 21st century and technology skills. The public school teachers play a vast function in the development of teaching and getting to know the process. The Ministry of training in Guyana (2019) discussed that academics play crucial roles within the lives of the students in their classrooms. Teachers are best recognized in the position of educating the scholars that are positioned in their care.

The data in Tables 5 and 6 illustrate the concrete design of the teachers' training implemented by the school administrator to address the needs of the teachers.

Table 5: Teachers' Training for 21st-century skills

Topic	Sub-Topic
The 21st Century Classroom	A Teacher facilitates by directing students to rich learning sources and asking students to demonstrate what they know and can do.
Effective Communication Skills	1. Teaming 2. Collaboration 3. Interpersonal skills 4. Local, national and global orientation 5. Interactive communication
Effective Communication Skills	1. Creativity 2. Curiosity 3. Critical thinking, problem-solving skills 4. Risk-taking
Learning and Innovation Skills	Creativity and Innovation 1. Think Creatively 2. Work Creatively with Others 3. Implement Innovations
Learning and Innovation Skills	Communication 1. Articulate ideas successfully with the use of oral, written, and nonverbal communication competencies in a whole lot of forms and contexts 2. Listen correctly to decipher meaning, which includes knowledge, values, attitudes, and intentions 3. Use verbal exchange for various purposes (e.g. To inform,

	instruct, inspire and persuade) 4. Utilise multiple media and technologies, and know-how to decide their effectiveness a priori in addition to examine their impact 5. Communicate correctly in numerous environments
Learning and Innovation Skills	Collaboration 1. Demonstrate capacity to work efficaciously and respectfully with various teams 2. Exercise flexibility and willingness to help make the important compromises to accomplish a not unusual goal. 3. Assume shared obligation for collaborative work, and value the man or woman contributions made by each crew member

Life and Career Skills	Flexibility and adaptability
	   1. Leadership and responsibility
	   2. Social and cross-cultural skills
	   3. Initiative and self-direction
	   4. Productivity and accountability
	   5. Ethical, moral and spiritual values

	Flexibility and Adaptability
	   1. Adapt to varied roles, job responsibilities, schedules, and
	contexts.
	   2. Work effectively in a climate of ambiguity and changing
	priorities.
	   3. Incorporate feedback effectively.
	   4. Deal positively with praise, setbacks, and criticism.
	   5. Understand, negotiate and balance diverse views and beliefs to
	reach workable solutions, particularly in multi-cultural environments

Info, Media and Technology Skills	Visual literacies 1. Ability to interpret from data presented in the form of an image. 2. Ability to evaluate, apply, or create conceptual visible representations
	Information literacy 1. Ability to become aware of what data is needed 2. Identify the satisfactory resources of data for a given need 3. Locate assets, evaluate the sources critically, and percentage that data

Table 6: Teachers' Training in technology skills

Technology skill	Specific Topics
1. Word Processing Skills	The word processing program to complete written tasks promptly.
2. Spread sheets Skills	A program to compile grades and chart data.
3. Database Skills	A database program to create tables, store and retrieve data, and query data.
4. Electronic Presentation Skills	An electronic presentation software to create and give electronic presentations
5. Web Navigation Skills	To navigate the World Wide Web and search effectively for data on the Internet
6. Web Site Design Skills	To design, create, and maintain a faculty/educator Web page/site.
7. E-Mail Management Skills	To use e-mail to communicate and be able to send attachments and create e-mail folders.
8. Digital Cameras	To operate a digital camera and understand how digital imagery can be used.
9. Computer Network Knowledge Applicable to your School System	To know the basics of computer networks and understand how their school network works.
10. File Management & Windows Explorer Skills	To manage their computer files and be able to complete the following tasks: create, and delete files and folders, move and copy files and folders using the My Computer window and Windows Explorer.
11. Downloading Software From the Web (Knowledge including eBooks)	To download software from the web and knowledge of the major sites that can be used for this purpose.
12. Installing Computer Software onto a Computer System	To install computer software onto a computer system
13. Web CT or Blackboard Teaching Skills	To be aware of these two online teaching tools and know about them and/or know how to use them to teach or take classes.
14. Videoconferencing skills	To use a video conferencing classroom and understand the basics of teaching with Video Conferencing.
15. Computer-Related Storage Devices (Knowledge: disks, CDs, USB drives, zip disks, DVDs, etc.)	To use the following data storage devices: disks, CDs, USB drives, zip disks & DVDs.
16. Scanner Knowledge	To use a scanner and what OCR capacity is

17.	Knowledge of PDAs	Know what a PDA is and how to use one.
18.	Deep Web Knowledge	To know what the deep web is and how to use it as a resource tool.
19.	Educational Copyright Knowledge	To understand the copyright issues related to education,including multimedia and Web-based copyright issues.
20.	Computer Security, Knowledge	To know about basic computer security issues related to education.

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