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The 21st Century Learning Skills and Teaching Practices of Pre-Service Teachers: Implication to the New Philippine Teacher Education Curriculum

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Abstract— *Studies have been conducted to find out the readiness of the Pre-service teachers (PSTs) for the real world of teaching. One of the important aspects of teaching in the 21st Century are the learning skills as well as the teaching skills to be acquired and developed by the teachers while still having their training in the college. This study sought to describe the 21st century learning skills and teaching practices of pre-service teachers.*

Results of this descriptive study showed that Pre-service teachers performed the 21st century skills in using technology in all occasions. They always used technology as a means for learning in the classroom. This also showed that they considered technology as important part of the teaching-learning process.

Despite the efforts made by the PSTs in utilizing the 21st Century learning skills during their practice teaching, problems were encountered which hindered the success of their endeavors. The attitude of the learners towards learning with the use of technology ranked the highest. Pre-service teachers considered their Classroom Management skills as their weakest skill. This must be noted that it is not one among the lists of skills in the 21st Century learning, but this can be considered in developing most of the skills.

The College of Education is in its continuing pursuit for excellence in all aspects of its delivery of services to the ultimate beneficiary, the learners. This study helped determine the weak points of the pre-service teachers in terms of the 21st century skills thereby, determining also the entry point for strengthening and enhancing 21st century skills. The 2018 New Curriculum, if well implemented would ensure improvement of the 21st century skills.

Keywords— *21st Century Learning Skills; teaching practices; Pre-service teachers.*

I. INTRODUCTION

To be college and career-ready today, student learning must go beyond mastery of core subjects, and must, to a great extent, include 21st-century knowledge and skills such as critical thinking, communication, collaboration, and technology literacy. Similarly, equipping pre-service teachers with effective tools and strategies that help them to think critically and reason logically is essential preparation to meet the challenges of the 21st-century teaching.

Teacher education has a significant role in preparing pre-service teachers with adequate 21st-century skills, i.e. skills for learning, creative and critical thinking, collaboration, and the ability to take advantages of ICT. The American Association of Colleges for Teacher Education (AACTE) and the Partnership for 21st Century Skills (Partnership for 21st Century Skills, 2008) believe new teacher-candidates must be equipped with 21st-century knowledge and skills and learn how to integrate them into their classroom practice. Likewise, the teacher education institutions (TEIs) of the Philippines has made it a goal to successfully meet the challenges of this century. This is not a matter of teaching either academic or 21st-century knowledge and skills. Instead, it is about fusing the two, so that children at their early grades meet the demands of a global economy, as well as engage in good citizenship and participate fully in a vibrant and civil society.

During the three and one-half years of classroom instruction, education students are provided with varied activities to support diverse learners using technology, differentiation, and student-centered instruction. They are given opportunity to develop their skills by getting engaged with authentic learning tasks, solving complex real-word problems, integrating technology into their instruction and assessments, and fostering cooperative learning in the classroom to ensure success in 21st-century learning. All these are adherent to the TEI's 21st-century skills development goals. Hence, since the education students' skills are developed, it is likewise expected that they use these skills during their pre-service teaching, more so when they become real teachers. Such is the major focus of the 21st-century skills movement (P21).

However, cooperating teachers observed that the current teaching practices of pre-service teachers do not match nor fully respond to the needs of the 21st-century learning environments, such as inquiry and student-centered approaches and the positive use of ICT (social media, wikis, blogs, mobile technology). Many people acknowledge the benefits of these so called '21st-century skills' but not all students are getting equal access to them, and they are not being properly assessed and recognized. This observation conforms with Crutcher's (2011) contention on widespread consensus that education systems are failing to adequately prepare all students with the essential 21st-century knowledge and skills necessary to succeed in life, career, and citizenship.

Consequently, many pre-service teachers are not learning all the necessary 21st-century skills in school, and if they are, college students are not learning them very well either. Many of them face the pressure of diverse learners' expectations and the challenges from their day-to-day teaching assignments. They are often required to accomplish different tasks with diverse goals and objectives within a tight time frame (Hixson et al., 2012). These, in turn, require teacher-students to have skills for self-regulation, creative and critical collaboration,

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communication, self-direction, making global and local connections, and ability of using ICT in teaching (Ravitz, 2014). There is a need for a systematic assessment on the pre-service teachers' 21st-century learning skills and their teaching practices during their practice teaching. This is to see the impact of application of the different pedagogical approaches on the development of 21st-century skills, knowledge and attitudes, especially in the teacher education context.

This research is a vital step to promote the inclusion of 21st-century knowledge and skills formally into teacher preparation programs. In subsequent phases of this work, it is hoped that provision of additional resources and technical assistance to support this effort among colleges of education nationwide. It focuses on the process of inquiry from a pedagogical perspective and it will be treated as a method for restructuring activities in the classroom, especially focusing on the development of the 21st-century skills-based learning approaches.

I. Review Of Literature

Teachers are undoubtedly the most important component of the educational system but the way they are being trained and educated today leaves much more to be desired and achieved. With the aim of raising the quality of pre-service teacher education program through empowering students with the right skills to succeed in the 21st century workplace, the National Council of Teacher Education (NCTE) formulated norms and standards and developed the curriculum framework for quality Teacher Education.

During the last few years, studies have been conducted and found a great demand for measuring the 21st-century learning skills as an emergent concern in the teacher education institutions, bringing about significant issues among educators, curriculum designers and policy makers. A group of 250 researchers across 60 institutions worldwide started the Assessment & Teaching of 21st Century Skills (ATC21S) Project and found that transforming education for the 21st century was very challenging that necessitates the inclusion of collaborative and digital literacy skills in the educational system (ATC21S, 2013). It further found that the skills prepare students for the challenges they will face as adult citizens in the society and the workplace.

Likewise, CHED's efforts to promote outcome-based education (OBE) included competency-based learning standards (CHED, 2014) through its Commission Memorandum Order No. 46 (CHED, 2012), promoting outcomes-based education and typology-based quality assurance. This is to define their curricular programs through their expected program outcomes to pronounce how they will contribute to building quality and expert workforce. Pursuant to this program, the Philippine NCTE initiated outcome-based teaching and learning (OBTL), which starts with clearly stating the outcomes of teaching, learners' tasks, and standards.

Morales (2017) described how the premier teacher-training institution of the country pioneered the *outcome-based teacher education curriculum* (OBTEC) by introducing the concept of envisioning innovative, humane teachers, competent educational leaders, and proficient research scholars as the key to economic survival in the 21st century. This demand is instituted in the mandates of *Philippine Qualifications Framework* (PQF, 2012) that defines how each Philippine agency should contribute to building a quality nation with respect to human development, productivity, and global competitiveness.

A study conducted by Miller (2009) and Weimer (2012) determined the significance of studying the impact of 21st-century learning in the teaching of high school English. Results showed the stunning impact of the digital era as it has changed life in general, well beyond the English classroom. In like manner, the industrial age, as they call it, develops students who learn through inquiry, who can investigate a problem they would like to improve, and then research the problem online. Just as the internet is a dominant force in the business world, it is also a dominant instructional text within the present classrooms.

Lim et al. (2010) and Symonds et al. (2011) investigated the effect of 21st-century skills incorporated in Singapore education institution. It was found out that the school restructuring to focus on preparing students for careers and future teachers in the 21st century has lessened the career training for far too long because it is essentially addressed to "career-ready" along with the "survival skills"— think critically, solve problems, communicate, collaborate, find good information quickly, and use technology effectively. Likewise, Fortenbury (2013) claimed that 21st-century knowledge and skills have been appropriately embedded in the curriculum preparation and were successfully incorporated in the classroom. The institution has provided the necessary support in the development of resources and services to support the program.

A longitudinal study on Extended Professional Development in Project–Based Learning (PBL) and its impact on 21st-century skills teaching and student achievement was undertaken by Virginia Department of Education (WVDE) within the years 2008 to 2010. There were eight 21st-century learning skills identified. These include critical thinking, collaboration, communication, creativity and innovation, self-direction, making global connections, making local connections and the use of technology as a tool for learning.

It was found out that there were substantial and statistically significant effect size differences between teachers who used extensively PBL than those who did not. These PBL-using teachers taught 21st-century learning skills more often and more extensively. The study further showed that students of these teachers performed better and were perceived to be skillfully meeting the demands of the global economy.

In the report *Unleashing the Future: Educators "Speak Up" About the Use of Emerging Technologies for Learning*, Project Tomorrow explored the view of teachers and leaders, and future leaders (Project Tomorrow, 2010). Teachers reported that as a result of using technology in the classroom, students were more motivated to learn (51%), apply their knowledge to practical problems (30%) and take ownership of their learning (23%). Teachers also reported that by using technology, students were developing key 21st-century skills

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including creativity (39%), collaboration (30%) and problem-solving and critical-thinking skills (27%); thus, effectively preparing them for future success in the workplace.

II. Framework of the Study

The current study is anchored on the vision of Partnership for 21st Century Skills (P21), an organization which brings together the business community, education leaders and policymakers to define a powerful visualization for 21st-century education (P21, 2013). It formulated a framework for 21st-century learning which describes the skills, knowledge and expertise students need to master in order to succeed in the 21st century. Its Framework for 21st Century Learning outlines what students need to know and be able to do in order to succeed. There are four components to the P21 framework. These are: Core subjects and 21st-century themes (such as English, mathematics, science, global awareness, and financial literacy); Learning and innovation skills (such as creativity, innovation, critical thinking, and problem solving); Information, media, and technology skills and Life and career skills (such as initiative and self-direction).

The skills that form the basis for 21st century curricula emphasize communication, collaboration, problem solving, citizenship, and digital fluency. The recently released National Educational Technology Plan reiterates that whether the domain is English language arts, mathematics, sciences, social studies, history, art, or music, 21st century competencies and expertise such as critical thinking, complex problem solving, collaboration, and multimedia communication should be woven into all content areas (US Department of Education, 2010). Equally important is gaining a knowledge and understanding of the interdisciplinary nature of learning which includes the intersection between core subjects.

This study is also hinged on the National Council of Teachers of Education's (NCTE) core subject maps that show how to infuse 21st century skills into core classes as adopted by teacher education institutions including the Philippines (Weimer, 2012). The NCTE made every effort for improving the quality of teacher preparation to acquire the most relevant, useful, in-demand, and universally applicable skills in today's teacher schools in the country. This is to ensure that 21st-century learning skills are developed among future teachers so that they will teach the same skills they learned and reflect the specific demands that will be placed upon them in a complex, competitive, knowledge-based, information-age, technology-driven economy and society.

In like manner, the PQF urges educators to do progressive and practical assessment in different educational institutions in the country (PQF, 2012) pursuing 21st-century learning skills initiatives. The most effective of these are focused on integrating 21st-century knowledge and skills in the implementation of the K–12 Basic Education Curriculum (Department of Education, 2016). These can be measured through the 21st-century learning skills which are equally important in promoting understanding of academic content at much higher levels. These include: critical thinking skills; collaboration skills; communication skills; creativity and innovation skills; self-direction skills; global connections; local connections and using technology as a tool for learning.

The NCTE initiated a dialogue on the importance of 21st-century learning skills to align the curriculum with 21st-century approaches to teaching and learning. It follows the principles of engaging prospective teachers in creating instruction aligned with their state's curriculum standards, effectively interpreting assessment results, responding to students' learning needs, and cultivating a passion for learning that will support students for a lifetime, and meet the demands of the global economy by exemplifying, and embedding in instruction, the mastery of 21st-century skills such as critical thinking, problem-solving, communication, collaboration and creativity and innovation. This includes the application of technology to support more robust instructional methods and understanding the relationship between content, pedagogy and technology through dissemination of Technological Pedagogical Content Knowledge (TPCK) theory and research (American Association of Colleges of Teacher Education 2008, US Department of Education, 2010).

The conceptualization of these skills came from the international Innovative Teaching and Learning study (Henardn & Roseveare, 2012; Shear et al., 2010) and Partnership for 21st Century Skills after extensive review of different sources. On the other hand, Critical Thinking Skills refers to students being able to analyze complex problems, investigate questions for which there are no clear-cut answers, evaluate different points of view or sources of information, and draw appropriate conclusions based on evidence and reasoning. On the other hand, Collaboration Skills refers to students being able to work together to solve problems or answer questions, to work effectively and respectfully in teams to accomplish a common goal and to assume shared responsibility for completing a task.

Communication Skills refers to students being able to organize their thoughts, data and findings and share these effectively through a variety of media, as well as orally and in writing. Creativity and Innovation Skills refers to students being able to generate and refine solutions to complex problems or tasks based on synthesis, analysis and then combining or presenting what they have learned in new and original ways. Self-direction Skills refers to students being able to take responsibility for their learning by identifying topics to pursue and processes for their own learning and being able to review their own work and respond to feedback.

Global Connections refers to students being able to understand global, geo-political issues including awareness of geography, culture, language, history, and literature from other countries. Likewise, Local Connections refers to students being able to apply what they have learned to local contexts and community issues. As to Using Technology as a Tool for Learning, this refers to students being able to manage their learning and produce products using appropriate information and communication technologies. August 11, 2017 marked the adoption and implementation of DO 42, s 2017, the Philippine Professional Standards for Teachers (PPST). Formerly, this was known as the National Competency-Based Teaching Standard. This is a set of

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standards to measure the performance of beginning teachers. Two of the 37 indicators of the Philippine Professional Standards for Teacher: Beginning Teachers (PPST), focused on the ICT skills of the beginning teachers.

One is found in Domain 1: Content Knowledge and Pedagogy, 1.3.1, which states that beginning teachers must be able to show skills in the positive use of ICT to facilitate the teaching and learning process. Another indicator is gauged based on Domain 4: Curriculum and Planning specifically, 4.5.1, which states that they must be able to show skills in the selection, development and use of variety of teaching and learning resources, including ICT, to address learning goals. These implies that the 21st Century Learning Skills, which is basically ICT, is of great importance.

III. Objectives of the Study

The main objective of this study was to determine the 21st-century learning skills of the Pre-service teachers (PSTs) and their teaching practices during their practice teaching at Bukidnon State University Laboratory School, Bukidnon, Philippines.

Specifically, the researchers attempted to:

1. determine the pre-service teachers' 21st century learning skills;
2. identify the 21st-century teaching practices employed by the pre-service teachers in the classrooms;
3. describe the challenges encountered by elementary pre-service teachers in the practice of their 21st-century teaching skills in the classroom,

IV. Methodology

The study employed the descriptive research design. It determined the 21st-century learning skills of the pre-service teachers, their teaching practices and the challenges they encountered during their practice teaching. This was conducted at Bukidnon State University Laboratory School during the School Year 2017-2018.

Bukidnon State University is one of the Higher Education Institutions (HEIs) in the province of Bukidnon. It has the College of Teacher Education which offers four degree-programs, namely: Bachelor of Elementary Education, Bachelor of Secondary Education, Bachelor of Early Childhood Education, and Bachelor of Science in Physical Education. The college has a total population of 1,410 students from first year to fourth year of which 10% are pre-service teachers deployed in the elementary laboratory school doing their practice teaching. This on the job training usually happened at the second semester of the school year. It is expected that these pre-service teachers have finished their academic requirements prior to their practice teaching.

There were 142 pre-service teachers who served as participants of the study identified through systematic random sampling. Sixty-nine percent (69%) of them were females (98), and 31% were males (44). Their age ranged from 20 to 23 years old and were mostly from average income families. These practice-teachers were assigned to different grade levels from kindergarten up to grade six. There were 20 to 25 of them assigned in one classroom under the supervision of 3 to 4 supervising instructors.

The data were gathered utilizing triangulation where a survey questionnaire from Ravitz (2014) was adopted in determining the 21st-century learning skills of the pre-service teachers. Interview and focus group discussion (FGD) were also conducted to gather the data on their different 21st-century teaching practices and the challenges encountered in the practice of the 21st century teaching skills in the classrooms. Mean, standard deviation and narrative analysis were employed in the treatment of the data being gathered.

V. Results and Discussions

Table 1 show that Pre-service teachers performed the skills in using Communication, Collaboration and Critical Thinking *in all occasions*. They always used these skills as means for learning in the classroom. This also showed that they considered the first three 21st century skills as important part of the teaching-learning process. They believed that communication, collaboration and critical thinking are integral part of their job in teaching and have used these in doing all of their tasks. This result seems to fall in step with the finding of Lim et al. (2010) and Symonds et al. (2011) in that schools in Singapore include in their training of future teachers to utilize these skills effectively in their teaching sessions. This result further implies that the locale of this present study considers its curriculum to be updated in view of the 21st-century learning standards.

Table 1. *Pre-Service Teachers' 21st Century Learning Skills*

Pre-Service Teachers' 21st Century Learning Skills	Overall Mean	Qualifying Description	Qualifying Statement
Communication	4.36	Always	Perform the skills in all occasions
Collaboration	4.30	Always	Perform the skills in all occasions
Critical Thinking	4.27	Always	Perform the skills in all occasions
Creativity and Innovation	4.18	Often	Perform the skills in most occasions
Self-Direction	4.16	Often	Perform the skills in most occasions
Local Connection	4.08	Often	Perform the skills in most occasions
Global Connection	3.24	Sometimes	Perform the skills in some occasions
Using Technology	3.23	Sometimes	Perform the skills in some occasions
Total Overall Mean	3.97	Often	Perform the skills in most occasions

The Pre-Service Teachers perform these skills in all occasions as they believed that classroom tasks are best achieved through all of these skills among learners and peers. The student teachers possess the skills like accessing, analyzing, managing, integrating, evaluating, and creating information in a variety of forms using appropriate techniques

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and strategies communicating this information in an appropriate oral, written, or in a blended format. Likewise, collaboration and critical thinking skills are also performed by PSTs in all occasions.

On the other hand, the table further illustrates that Creativity and Innovation, Self – Direction and Local Connection Skills are seen as the next 21st-century skills that the teachers *often* perform. These skills are often performed by the beginning teachers while the use of global connections and the use of technology are found to be practiced *sometimes* or performed only in some situations. Obviously, this would mean pre-service teachers find difficulty in their accessibility to make international connections which barely utilize different forms of technology that is why they sometimes and out of sorts perform these skills.

The overall result complements what the P21 has envisioned for future career workforce: individuals who can perform non-routine, creative tasks to succeed. While skills like self-direction, creativity, critical thinking, and innovation may not be new to the 21st century, they are relevant in an age where the ability to excel at non-routine work is not only rewarded, but also expected as a basic requirement. They are expected to be able to think critically, solve problems, communicate, collaborate, find good information quickly, and use technology effectively. They possessed the so-called today's survival skills— not only for career success, but for personal and civic quality of life as well (Partnership for 21st Century Skills, 2010).

The 21st Century Teaching Practices Employed by the Pre-service Teachers in Their Classrooms

The Pre-service teachers' 21st-century teaching practices is presented in Frame 1. It reveals the common teaching practices of the Pre-service teachers on the 21st-century learning skills. It can be gleaned from the result that pre-service teachers were asked what strategies they used, and at the same time, what they considered in the application of their skills. Survey has shown that Collaboration Skills strategies were greatly practiced and applied, as considered by most of the respondents. This is followed by application of Communication Skills strategies, which is practically supporting the collaborative skills strategies because it is believed that communication fosters collaboration. This is supported by the strategies mostly employed by the pre-service teachers which includes group activities, games and interactive learning activities.

Furthermore, the survey showed that a small number of pre-service teachers used critical thinking strategies, as well as strategies using global and local connections, probably because opportunities were not present during their practice teaching. This was also evident in the result of responses in question number one. However, this result may not necessarily mean they will not need these skills anymore. In fact, since critical thinking skills are indispensable for a learner to survive in this era, the researchers deemed it crucial to further develop and create opportunities to apply such skills (critical thinking skills, self-directions skills, global and local connections skills).

Frame 1. The 21st Century Teaching Practices Employed by the Pre-service Teachers in the Classrooms

21st-Century Learning Skills	Teaching Practices/Strategies
1. Critical Thinking Skills	-Let the learners compare from different sources before completing a task or assignment; and -draw own conclusions based on analysis of facts or relevant information
2. Collaboration Skills	-Allow learners to work in pairs or small groups to complete a task together; -Work as a team to incorporate feedback on group tasks; -Work with other learners to set goals and create a plan for the group; -Give feedback to peers or assess another learners' work; -Present their output to the class
3. Communication Skills	-Allow each learner to decide how he/she will present his/her work or demonstrate learning; -Organize/plan for an activity where they can do oral presentations (e.g., creating charts, tables or graphs); - Prepare and deliver an oral presentation to the teacher or classmates; -Answer questions in front of an audience; - -Deliver ideas using media other than a written paper like posters, video clips, PowerPoint slide, and etc.
4. Creativity and Innovation Skills	-Learners are given a chance to use idea creation techniques such as brainstorming or concept mapping; -Generate own ideas about how to confront a problem or question; -Test out different ideas and work to improve them.
5. Self-Direction Skills	-Each child is allowed to choose what examples to study or resources to use; -Take initiative when confronted with a difficult problem or question; -Choose own topics of learning or questions to follow.
6. Global Connections	Learners are given a chance to understand the life experiences of people; -Use information or ideas of people that come from other countries of cultures.
7. Local Connections	-Learners apply what they learn to local situations, issues or problems; -Examine topics or issues that are relevant to own family or community; -Talk to one or more members of the family or to the community about a class project or activity; -Respond to a question or task in a way that weighs the concern of different community members or as a group.
8. Using Technology as a Tool for Learning	-Learners use technology to limited multimedia for research and projects -Select appropriate technology tools or resources for completing a task; -Evaluate the credibility and relevance of online resources; -Use technology to help share information (e.g., multimedia/ppt presentations -Use technology to keep track of work on extended tasks or assignments;

Measures must be done to develop among pre-service teachers and, more importantly, among learners, these 21st-century skills.

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The Challenges Encountered by Elementary Pre-service Teachers in the Practice of Their 21st Century Teaching Skills in the Classroom

Despite the efforts made by the Pre-Service Teachers in utilizing the 21st Century learning skills during their practice teaching, problems were encountered which hindered the success of their endeavors. As revealed in Frame 2, the attitude of the learners towards learning with the use of technology ranked the highest. Pre-service teachers considered their Classroom Management skills as their weakest skill. This must be noted that it is not one among the lists of skills in the 21st Century learning, but this can be considered in developing most of the skills. Amazingly, nobody among the respondents considered Collaborative Skills strategies as their problem. This may be supported by their consideration as the most common practice in applying the learning skills in the 21st century.

Frame 2. Challenges Encountered by Pre-service Teachers in the Practice of Their 21st Century Teaching Skills in the Classroom

Challenges Encountered in the Practice of Their 21st Century Teaching Skills	Rank
• Attitude of learners	1
• Inadequate facilities & gadgets/ absence of tech	2
• Lack of knowledge and skills on how to use technology to differentiate instruction for learners	3
• Learning Environment	4
• Lack of knowledge about Global trends & Current Issues	5

Another problem perceived by the pre-service teachers is the absence, if not the lack of, technological facilities and gadgets for technological skills application. They claimed that they wanted to utilize different forms of multimedia such as Google, yahoo, Facebook, YouTube for their research and projects but they lack the hands on skills on how to. They appealed that they lack the abilities on how to share information using sound or video, presentation software, blogs, podcasts, and to support team work using shared work spaces, e-mail exchanges, giving and receiving feedback and more. But because of the deficiency of awareness and capability with the limited access to gadgets, all these are of no avail.

This greatly hindered their delivery of instruction in the teaching-learning process. In this regard, during the focus group discussion, most of the participants strongly suggested for opportunities to practice the skills and for the pre-service to explore some more. They also suggested for the conduct of seminars and trainings that would enhance their acquired skills. They also considered self-improvement by attending seminars and workshops to develop some more skills to keep abreast with the 21st-century learning skills.

This finding supports the result of Project Tomorrow's (2010) study where some of the teacher-candidates reported that they lacked the knowledge and skills during their teaching methods courses on how to use internet-based tools (blogs, wikis, social networking, etc.) to facilitate collaboration between students. Unfortunately, the primary skills being taught in methods courses are on the use of the basic productivity tools, such as word encoding and processing.

This challenge as viewed by the participants seems parallel with their response in the first problem where they claimed to have sometimes used technology in their classrooms. This comparable response is attributed to the notion that the participants could have viewed similarly the extent and depth on their need of the use of technology.

Moreover, one of the most important aspects of 21st century teaching is the learning environments. Although motivation is highest when teachers begin their careers in the classroom, it is known that one of the main reasons that new teachers struggle in the early years of teaching is that they lack a strong mentor with whom to collaborate. Many PSTs are apprehensive in consulting their supervising instructors as the main person from whom they can get help most in the professional learning community. PSTs need peer coaching especially in their clinical programs, to ensure the long-term practice of continuous development through collaboration with colleagues.

VI. Conclusion

The College of Education is in its continuing pursuit for excellence in all aspects of its delivery of services to the ultimate beneficiary, the learners. This study attempted to find out the 21st Century learning skills of the pre-service teachers. It also determined which of these are already acquired and developed, as well as applied by these pre-service teachers in their teaching practicum. This study also solicited ideas from the respondents regarding the challenges they encountered that hindered their implementation and application of the 21st century skills. Based on the results, the following conclusions were drawn.

First, the pre-service teachers always used communication as a means of learning. This is followed by the Collaboration Skills strategies that were greatly practiced and applied by the respondents. This has to show that the application of communication skills strategies practically supports the collaborative skills strategies of learners. This is because communication fosters collaboration. This is supported by the strategies mostly employed by the pre-service teachers which includes group activities, games and interactive learning activities. This positive result of the study supports one of the core values of the university which is fostering unity among the BukSU community.

Second, the pre-service teachers disclosed the challenges and the problems they have met in their journey of practice teaching pertaining to the implementation and application of the 21st Century learning skills. It was noted that the problem highlights the weak classroom management skills of the PSTs that results to negative attitude of the learners towards the teachers' use of technology.

Finally, the aforementioned findings would imply for the strengthening of the development and practice of the 21st Century learning skills among Pre-service Teachers. The 2018 Curriculum for Teacher Education fosters and supports the clamor for the ICT in the teaching – learning process with the presence of the subject Technology for Teaching and Learning 1 and 2. They considered technology as important part of the teaching-learning process. They believed that technology is an

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integral part of their job in teaching and have used it in doing all of their tasks.

The Implication of the Result of the Study to the College of Education

Assessing the 21st-century skills of the pre-service teachers may be a basis for planning possible instruction that would cater to the present needs of the college students in the development of their abilities and competencies. This would be likely applied as they conduct the same knowledge and skills in their future teaching in the field. Teacher Education Institutions specifically in the Philippines may learn what it takes to develop the 21st century education students to think critically about the world, engage appropriately with digital and social media, and build the collaboration and communication skills necessary for success in college and in the future teaching profession.

Faculty members of the College of Education can review best practices and strategies for engaging education students to develop the 21st-century skills. This would include aligning lessons in the course syllabus to the CHED Standards and objectives, connecting content to real-life experiences, and activating prior knowledge to enhance real life learning experiences. This is for the sound application of the 21st-century skills in the actual field of work.

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