

21st CENTURY SKILLS OF PRE-SERVICE SECONDARY TEACHERS OF BATAAN PENINSULA STATE UNIVERSITY DINALUPIHAN CAMPUS

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ABSTRACT

Globalization, international mobilization, and technological innovations are some demands of the future. Students must prepare to face these challenges and grasp the opportunities brought by the changing time. To succeed in this modern world, a wide range of knowledge, aptitudes and character qualities are important. This study assessed the 21st-century skills of the pre-service teachers in the Bataan Peninsula State University, Philippines based on the theory of Eight Habits of Highly Effective 21st Century Teachers by Andrew Churches. The researcher used the descriptive method of research and the respondents of this study were the 212 pre-service teachers. Frequency, percentage, weighted mean, t-test, and ANOVA were the statistical treatments used in this study. The researcher used the SPSS Statistical Package for the Social Sciences in the computation of data. The study found that most of the respondents were 24 years old and female. The study revealed the overall 21st century skills of the respondents as outstanding. Among the skills that respondents have is that being risk-takers, followed by being a model, visionary, adaptor, collaborator, leader, learner, while the lowest mean was on being a communicator. There was no significant difference in the 21st-century skills of the pre-service teachers when they were grouped according to profile. Because communication skills was found to be the weakest skill possessed by the respondents, teachers should focus more on the improvement of this skill by involving more students' active participation in class and other school activities.

Keywords: 21st-century skills, pre-service secondary teachers, communication skill, college of education, quantitative method, Philippines

INTRODUCTION

Technological advances and internationalization embrace today's generation. Learners must be prepared to cope with the demands of the modern world. As mentioned by Jerald (2009), the hardest thing to give up for American technology was that cell phones removed landline telephones and possible internet connections both enthroned the second most needed technology the television. Based on the research findings, the numbers signaled a down-right change not just on how people are turning information. Surprisingly, 62 percent of

Americans were able to use mobile technology to turn digital data and tools outside of their homes and workplace. In fact, technology has transformed the lives of every person tremendously for many years. In the first half of the 20th century, the American labor market was able to prosper and modernized its agriculture. Rapid technological advances were brought about the computer age. In just five years, the important daily tools have changed the lives of the people. An astonishing 62 percent of Americans said they use mobile technology to access digital data and tools "on the go" outside of their homes and workplaces. Of course,



technology broadly understood has been transforming human life in one way or another for thousands of years. The mechanization of agriculture transformed the American labor market in the first half of the 20th century. But in the modern age, the pace of technological advancement is very rapid. And when changes in daily tools occur in just five years, the impact over longer stretches can be profound. Many experts say that since the 1970s, new technologies, combined with demographic, political, and economic trends, have altered Americans' work and social lives in ways that have significant disadvantages for today's young people. Individual's tendencies have encouraged some education campaigners to reason that the old-style program is insufficient: for 21st-century skills schools must offer students with a wide-ranging set of strategies to flourish in a rapidly developing, the technology-drenched biosphere. According to Pack (2016), during the 21st century, people around the world discover and even practice and comprehend the things surrounding them in many innovative and diverse traditions. Knowledge and instruction are not exclusion with know-how as long as admission to practically any available data at the trace of a screen. With the help of this information, it would be better for the newer generations or the generation-z to assert the cover on what is allowed to be rationally capable. Most companies have noted that the younger age group of candidates lacks key skills, such as critical thinking, problem-solving, and communication, thus producing what various people call a skills gap. Studies suggest that this gap in higher-order thinking skills is growing. Fortunately, top educational firms are undertaking this increasing skills gap by addressing educational strategies to help students change sharper 21st-century skills. To succeed in this modern world, a wide range of knowledge, aptitudes and character qualities are extremely important. As a higher learning institution, the university should clearly have identified and defined 21st-century skills that can be applied in all academic subject areas, and all educational, career, and civic settings

throughout a student's life. To enhance the teaching profession and professional standards for teachers, the Department of Education (DepEd), through the Teacher Education Council (TEC), issued DepEd Order No. 42, S. 2017 or the National Adoption and Implementation of the Philippine Professional Standards for Teachers (PPST) which encourage the application of the skills appropriate for 21st-century learners in their practices as teachers. A study conducted by Vail (2010), entitled, "Teaching in the 21st Century" showed that because of the bigger weights of the 21st-century manufacturing, America's colleges and universities and accountability systems necessity imitate person skills vital for achievement. The outcomes of the study discovered many variations and most of the ideal settings are done in the classroom. Difficulties included the absence of selfless, heaviness with high-stakes difficulty, and absence of a guardian, apprentice, and instructor buy-in and sustenance. This is similar to the present study wherein the basic communication skill necessitates to be enhanced. However, this study differs from the reviewed study as the present one focused on the concept of the Eight Habits of Exceedingly Effective 21st Century Educators conceptualized by Andrew Churches, who conferred that great educationalists are student-centered, rounded and they communicate on how to pick up as much as instruction is a concern and the extent of focus. The 21st-century dynamic teachers have the right skills like communicating, modeling, learning, collaborating, leading, adapting, visionary, and risk-taking (Salavert, 2015). For this reason, this descriptive study's prime purpose is to measure the BPSU-DC pre-service teachers' required 21st-century skills to be able to survive and be effective teachers in this modernized world. Knowing the new breed of learners are as well-modernized and to bridge the gap between teachers' and learners' abilities, this study will be the basis in determining the current state of pre-service teachers' competencies so that if it still insufficient a better intervention can be designed.

OBJECTIVES OF THE STUDY

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This study aimed to measure the 21st-century skills of the pre-service teachers of Bataan Peninsula State University - Dinalupihan. Specifically, the study sought to answer the following: 1.) to identify the profile of the respondents as described in terms of age and sex; 2.) to measure the 21st-century skills of the pre-service teachers as communicator, model, learner, collaborator, leader, adaptor, visionary; and risk-taker; 3.) to determine if there is a significant difference in the pre-service teachers' 21st-century skills when they were grouped according to profile, and 4.) to know the implication of the findings of the study in the teacher education program.

RESEARCH METHODOLOGY

The researcher used the descriptive method of research since the intention of this study was to describe analytically the 21st-century skills of pre-service secondary teachers of BPSU-DC. The respondents of this study were the 212 pre-service teachers (4th Year Bachelor of Secondary Education Students). The questionnaire was prepared for the respondents. The items in the questionnaires were adapted and modified from the theory of Eight Habits of Highly Effective 21st Century Teachers by Andrew Churches. The instrument was subjected to validation with a pool of evaluators comprising specialists in the field. This descriptive-survey method was administered to the 4th year BSED students in the College of Education. The researcher personally conducted the floating of the questionnaires after seeking permission from the Dean of Instruction. Frequency, percentage, weighted mean, t-test, and ANOVA were the statistical treatments used in this study. SPSS Statistical Package for the Social Sciences was used in the computation of data.

RESULTS AND DISCUSSION

This presents the analysis and interpretation of the findings of the study.

1. Profile of the Respondents

Table 1 presents the profile of the pre-service teacher respondents in terms of age and sex.

Table 1. Profile of Respondents

Pre-Service Teacher	f	%
Age		
19 to 20 years old	155	73.11
21 years old and above	57	26.89
Sex		
Male	79	37.26
Female	133	62.74
Total	212	100.00

As shown in Table 1, of the total 212 respondents, 155 or 73.11% of which were 19 to 20 years old, while 57 or 26.89% were under age 21 years old and above. As to the sex of the respondents, the majority or 133 or 62.74% were female, while there were only 79 or 37.26% who were male. The findings further revealed that the education program still dominated by female students which is similar to the statement of Maure (2017) that in 2014, women earned 80% of the Bachelor's degree in Education, creating a female-dominated candidate pool for new teaching positions. Women continued their advanced degrees and applied their expanded knowledge as teachers.

2. 21st Century Skills of Pre-Service Teachers

2.1 21st-century skills of pre-service teachers as a communicator.

As can be gleaned from the results, respondents described the pre-service teachers 21st-century skills as a communicator (Mean=3.24, SD=0.48) as to satisfactory and among the indicators, the highest mean was given by the respondents to indicator 2 (Mean=3.27, SD=0.62) representing that the pre-service teachers' performance was considered outstanding. On the other hand, the lowest mean



rating was given to indicator 5 (Mean=3.20, SD=0.69) and was described as very satisfactory.

Table 2. 21st Century Skills of Pre-Service Teachers as Communicator

Items	Mean	SD	VI
1. Observe correct grammar and proper diction.	3.26	0.67	O
2. Discuss the lesson clearly in the medium of instruction used.	3.27	0.62	O
3. Has the ability to motivate students to participate in the lesson.	3.20	0.69	VS
4. I spoke clearly with a well-modulated voice.	3.25	0.72	O
5. Free from mannerism or physical defects that tend to disturb the student's attention.	3.20	0.69	VS
Composite mean	3.24	0.48	VS

The study revealed that the respondents were only very satisfactory in their rating in communication skills and not outstanding like the other skills. Communication skill is perhaps the most important of all life skills. It is what enables them to pass information to other people and to understand what is said to them.

2.2 21st Century Skills of Pre-Service Teachers as a Model

Table 3. 21st Century Skills of Pre-Service Teachers as a Model

Items	Mean	SD	VI
1. He/ She is neat and well-groomed.	3.64	0.49	O
2. Behaves in a dignified and respectable manner.	3.60	0.56	O
3. Displays professionalism and is a role model for colleagues and students.	3.50	0.62	O
4. Establish professional linkages to a different organization to improve practice.	3.35	0.63	O
5. The teacher's character is strong enough to command admiration.	3.39	0.64	O
Composite mean	3.50	0.42	O

Table 3 shows that the 21st-century skills of the pre-service teachers as a model

(Mean=3.50, SD=0.42), were considered outstanding, and among the indicators, the highest mean was on indicator 1 (Mean=3.64, SD=0.49), and described as outstanding. However, the lowest mean was on indicator 4 (Mean=3.35, SD=0.63), and described also as outstanding.

2.3 21st-Century Skills of Pre-service Teachers as a Learner

Table 4. 21st Century Skills of Pre-Service Teachers as a Learner

Items	Mean	SD	VI
1. Attends seminars and training to be updated to the current trends in education.	3.45	0.67	O
2. Open to positive criticism from the superior without feeling offended.	3.31	0.69	O
3. Participate in professional growth activities.	3.39	0.61	O
4. Honor teachers, students, and peer assessment to enhance strength and correct weaknesses.	3.45	0.65	O
5. Attends meetings relative to curriculum and instructional activities updating.	3.48	0.62	O
Composite mean	3.41	0.47	O

Table 4 reveals that the 21st-century skills of the pre-service teachers as a learner (Mean=3.41, SD=0.47) were considered outstanding. This was confirmed by the rating provided by the respondents in indicator 5 (Mean=3.48, SD=0.62), which had the highest mean rating, and indicator 2 (Mean=3.31, SD=0.69) which had the lowest mean rating, both described as outstanding. The finding was strengthened with the statement made by Megler and Lane (2012) that teachers who currently teach are with a value focus and emphasized that pre-service teacher education degrees need to practice continual learning, critical reflection and growth in pre-service teachers, along with excellent questioning and listening skills.

2.4 21st Century Skills of Pre-Service Teachers as a Collaborator



Table 5. 21st Century Skills of Pre-Service Teachers as a Collaborator

Items	Mean	SD	VI
1. Demonstrate the ability to work effectively and respectfully with other interns.	3.47	0.60	O
2. Exercise flexibility and willingness to be helpful in enriching instruction.	3.38	0.62	O
3. Assume shared responsibility for collaborative work that promotes learning.	3.42	0.61	O
4. Uses collaboration tools to enhance and motivate learners.	3.44	0.68	O
5. Encourages students to apply classroom learning in the community.	3.51	0.62	O
Composite mean	3.44	0.45	O

As shown in Table 5, respondents considered the 21st-century skills of pre-service teachers as a collaborator (Mean=3.44, SD=0.45) as outstanding. Among the indicators, the highest mean was given by the respondents to indicator 5 (Mean=3.51, SD=0.62) and described as outstanding, while the lowest mean was given to indicator 2 (Mean=3.38, SD=0.62) and described also as outstanding. The result revealed that the respondents were collaborators. This was similar to the statement made by Hwang (2018) which revealed that teamwork is an important contributor to team performance, and his respondents also rated their satisfaction with the team in school.

2.5 21st-century skills of the pre-service teachers as a Leader

As can be gleaned in Table 6, the 21st-century skills of the pre-service teachers as a leader were considered outstanding by the respondents with a composite mean of 3.43 and a standard deviation of 0.45. Among the indicators, the highest mean was on indicator 5 (Mean=3.48, SD=0.59), described as outstanding, and the lowest mean was on indicator 1 (Mean=3.37, SD=0.58), considered also as outstanding. The findings revealed that future teachers are leaders.

Table 6. 21st Century Skills of Pre-Service Teachers as a Leader

Items	Mean	SD	VI
1. Use interpersonal and problem-solving skills to influence and guide others toward a goal.	3.37	0.58	O
2. Influence the strengths of others to accomplish a common goal.	3.46	0.56	O
3. Inspire others and set as good examples of selflessness.	3.44	0.60	O
4. Possess integrity and ethical standard in influencing others.	3.40	0.65	O
5. Act responsibly with the interests of the larger community in mind.	3.48	0.59	O
Composite mean	3.43	0.45	O

Results supported what Reeves and Lowenhaupt (2016) cited that even at the student teaching stage, the future teachers are expected to execute leadership.

2.6 21st Century Skills of Pre-Service Teachers as an Adaptor

Table 7. 21st Century Skills of Pre-Service Teachers as an Adaptor

Items	Mean	SD	VI
1. Enhances mastery of skills by developing one's skills to gain expertise.	3.52	0.56	O
2. Adapts software and hardware designed for learning tools.	3.41	0.60	O
3. Creative enough to adapt his/her methods to the students.	3.44	0.62	O
4. Delivers accurate and updated content knowledge using appropriate methodologies, approaches, and strategies.	3.42	0.61	O
5. Uses the integration of language, literacy, numeracy skills and values in teaching.	3.45	0.61	O
Composite mean	3.45	0.42	O

As shown in Table 7, the 21st-century skills of the pre-service teacher as adaptor were considered outstanding by the respondents as provided by the composite mean of 3.45 with a standard deviation of 0.42. Among the indicators, the highest mean rating was given by the respondents to indicators 1 (Mean=3.52, SD=0.56), described as outstanding, while the



lowest mean rating was given to indicator 2 (Mean=3.41, SD=0.60), described also as outstanding. As can be inferred from results, the pre-service teachers are adaptors which are related to the study conducted by Kaelin (2013), who revealed that field service trained the future teachers to be professionals. They were also trained to integrate technology into teaching. The study also suggested that the host school should continuously retrain the pre-service teachers to be more competent educators in the future.

2.7 21st Century Skills of Pre-Service Teachers as a Visionary

Table 8. 21st Century Skills of Pre-Service Teachers as a Visionary

Items	Mean	SD	VI
1. Optimistic and hold a positive outlook for the future and will achieve success.	3.54	0.58	0
2. See the potential in the group and manipulate emerging tools and web technologies.	3.39	0.62	0
3. Encourage students' participation in class in different ways.	3.49	0.64	0
4. Inspire open and non-judgmental discussion with the students.	3.43	0.66	0
5. Look at other ideas and envision how they would use these in the class.	3.58	0.57	0
Composite mean	3.48	0.45	0

Table 8 reveals that the 21st-century skills of the pre-service teachers as a visionary was considered outstanding with a composite mean of 3.48 and a standard deviation of 0.45. The highest mean rating provided by the respondents was on indicator 5 (Mean=3.58, SD=0.57), and the lowest was on indicator 2 (Mean=3.39, SD=0.62). Both were considered outstanding. The findings further showed that as a visionary teacher, their knowledge is not only limited to what they learned from school which is similar to the idea of Mora (2013) that the pre-service teachers integrate properly the good qualities that a good teacher must possess for better delivery of instruction.

2.7 21st Century Skills of Pre-Service Teachers as a Risk-Taker

Table 9. 21st Century Skills of Pre-Service Teachers as a Risk-Taker

Items	Mean	SD	VI
1. Create a safe learning climate by encouraging positive teacher/student relations.	3.58	0.57	0
2. Model risk-taking and be open-minded.	3.46	0.63	0
3. Allow opportunities for failing and consider how to handle errors.	3.44	0.62	0
4. Show appreciation for risk-taking.	3.52	0.56	0
5. Encourage Inquiry-based learning by inviting questions asking among students.	3.53	0.56	0
Composite mean	3.51	0.44	0

The above table reveals that the 21st-century skills of the pre-service teachers as risk-taker was considered outstanding by the respondents as provided by the composite mean of 3.51, with a standard deviation of 0.44. Among the indicators, the highest mean rating was on indicator 1 (Mean=3.58, SD=0.57) and described as outstanding, while the lowest mean was on indicator 3 (Mean=3.44, SD= 0.62) and described also as outstanding. The data further revealed that respondents were risk-takers, which was similar to the findings of Otteheim (2015) that student teachers are risk-takers since they considered experiences as their best teachers. They are willing to ask and learn from their mentors.

2.8 Summary of 21st Century Skills of Pre-Service Teachers

On the summary of the 21st-century skills of the pre-service teacher, it can be gleaned from the table that respondents described the overall skills as outstanding with the overall mean of 3.43 and a standard deviation of 0.35. Among the indicators, risk-taker (Mean=3.51, SD=0.44) had the highest mean rating, while the lowest mean was on communicator (Mean=3.24, SD=0.48).



Table 10. Summary of 21st Century Skills of Pre-Service Teachers

Indicators	Mean	SD	VI
Communicator	3.24	0.48	VS
Model	3.50	0.42	O
Learner	3.41	0.47	O
Collaborator	3.44	0.45	O
Leader	3.43	0.45	O
Adaptor	3.45	0.42	O
Visionary	3.48	0.45	O
Risk-Taker	3.51	0.44	O
Overall	3.43	0.35	O

The findings in the present study are similar to the study conducted by Serdar (2015) entitled, "Searching for Innovation, Creativity and

21st Century Skills: A Case Study of a Suburban Elementary School District" which revealed that seven themes of highly innovative, imaginative educators of 21st-century skills appeared among the teachers. Likewise, another study conducted by Clark et al. (2015) entitled, "A Phenomenological Study of Pre-Service Teachers Regarding 21st Century Technology Integration Training" discovered how work-related educators professed their pre-service working out concerning the incorporation of 21st Century expertise interested in teaching. Both researchers discovered that the soon be teachers in the 21st century, are also embracing innovations in the teaching-learning processes.

3. Comparison of the 21st Century Skills

3.1 Differences in the Assessment of the Respondents on 21st Century Skills of Pre-Service Teachers

Table 11. Differences in the Assessment of the Respondents on 21st Century Skills of Pre-Service Teachers

Indicators	Age Group	Mean	SD	t-Value	Sig.	Decision on H ₀	Interpretation
Communicator	19 to 20 years	3.23	0.50	0.56	0.57	Accepted	Not Significant
	21 years and above	3.27	0.41				
Model	19 to 20 years	3.47	0.43	1.62	0.11	Accepted	Not Significant
	21 years and above	3.57	0.38				
Learner	19 to 20 years	3.39	0.49	0.94	0.35	Accepted	Not Significant
	21 years and above	3.46	0.42				
Collaborator	19 to 20 years	3.44	0.46	0.11	0.91	Accepted	Not Significant
	21 years and above	3.45	0.45				
Leader	19 to 20 years	3.41	0.46	1.12	0.26	Accepted	Not Significant
	21 years and above	3.49	0.39				
Adaptor	19 to 20 years	3.44	0.45	0.66	0.51	Accepted	Not Significant
	21 years and above	3.48	0.35				
Visionary	19 to 20 years	3.46	0.46	1.18	0.24	Accepted	Not Significant
	21 years and above	3.54	0.42				
Risk-Taker	19 to 20 years	3.48	0.46	1.24	0.22	Accepted	Not Significant
	21 years and above	3.57	0.40				
Overall	19 to 20 years	3.42	0.37	1.19	0.24	Accepted	Not Significant
	21 years and above	3.48	0.28				

Computed using alpha level = 0.05



The study reveals that a significant difference was not evident in the assessment of the respondents on the 21st-century skills of the pre-service teachers when respondents were grouped according to age, as reflected in the overall t-value of 1.19, significant at 0.24 which was significantly greater than the .05 alpha; thus, it failed to reject the null hypothesis. In connection to this, a significant difference was not evident on pre-service teachers 21st-century

skills as a communicator (t=0.56, p=0.57), model (t=1.62, =0.11), learner (t=0.94, p=0.35), collaborator (t=0.11, p=0.91), leader (t=1.12, p=0.26), adaptor (t=0.66, p=0.51), visionary (t=1.18, p=0.24), and risk-taker (t=1.24, p=0.22) as reflected in the p-values which were significantly greater than the .05 alpha.

3.2 Differences in the Assessment of the Respondents on 21st Century Skills of Pre-Service Teachers

Table 12 presents the differences in the 21st-century skills of the pre-service teachers when respondents were grouped according to sex

Table 12. Differences in the Assessment of the Respondents on 21st Century Skills of Pre-Service Teachers

Indicators	Sex	Mean	SD	t- Value	Sig.	Decision on H ₀	Interpretation
Communicator	Male	3.20	0.52	0.87	0.39	Accepted	Not Significant
	Female	3.26	0.45				
Model	Male	3.48	0.45	0.45	0.65	Accepted	Not Significant
	Female	3.51	0.40				
Learner	Male	3.42	0.46	0.17	0.87	Accepted	Not Significant
	Female	3.41	0.48				
Collaborator	Male	3.37	0.44	1.77	0.08	Accepted	Not Significant
	Female	3.49	0.46				
Leader	Male	3.39	0.46	1.04	0.30	Accepted	Not Significant
	Female	3.46	0.44				
Adaptor	Male	3.38	0.43	1.71	0.09	Accepted	Not Significant
	Female	3.49	0.42				
Visionary	Male	3.45	0.44	0.96	0.34	Accepted	Not Significant
	Female	3.51	0.46				
Risk-Taker	Male	3.48	0.42	0.58	0.56	Accepted	Not Significant
	Female	3.52	0.46				
Overall	Male	3.40	0.35	1.16	0.25	Accepted	Not Significant
	Female	3.45	0.34				

Computed using alpha level = 0.05

The study revealed that a significant difference was not evident in the assessment of the respondents on the 21st-century skills of the pre-service teachers when respondents were grouped according to sex, as reflected in the overall t-value of 1.16, significant at 0.25 which was significantly greater than the .05 alpha; thus, it failed to reject the null hypothesis. In connection to this, significant difference was not evident in the pre-service teachers 21st century

skills as communicator (t=0.87, p=0.39), model (t=0.45, p=0.65), learner (t=0.17, p=0.87), collaborator (t=1.77, p=0.08), leader (t=1.04, p=0.30), adaptor (t=1.71, p=0.09), visionary (t=0.96, p=0.34), and risk-taker (t=0.58, p=0.56) as reflected in the p-values which are significantly greater than the .05 alpha.

4. The implication to the teacher education program



The findings of the study are an eye-opener to the college of education since it revealed that pre-service students are risk takers but less effective in communication skills. The college must strengthen more English instruction and provide more great communication opportunities for the students. Advancement in the teaching pedagogy and modernization in instructional materials must also be provided to the learners.

CONCLUSION

Considering the findings presented in this study, it concludes the following.

1. Most of the pre-service teachers are 24 years old and female.
2. The overall 21st century skills of the pre-service teachers are outstanding. Among the skills that the pre-service teachers possess according to rank are being risk-takers followed by being a model, visionary, adaptor, collaborator, leader, learner, and the lowest mean is being a communicator.
3. There is no significant difference in the 21st-century skills of the pre-service teachers when they are grouped according to profile.
4. This study revealed that the pre-service teachers' communication skills need to be enhanced through various learning opportunities.

RECOMMENDATION

Based on the major findings and the conclusion drawn, it suggests the following.

1. To enhance more the risk-taking skill of the students, expose them to a wide range of engagements like research or outcome-based activities.
2. Because communication skills found to be the weakest skill possessed by the respondents, teachers should focus more on the improvement of this skill. Involve

more students' active participation in class and other school activities.

3. The college of education should create more seminars or workshops wherein the students can take part to boost or enhance more the students' 21st-century skills.
4. The assessment of the 21st-century skills of the other programs also considered for future research.

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