

Exploring the Utilization and Effectiveness of the Practices of 21st-Century Teaching and Learning Skills of Pre-service Teachers: A Psychological Study

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Abstract

This study aimed to determine the extent of utilization of the 21st-century teaching and learning skills of the pre-service teachers in their off-campus teaching and to what extent of effectiveness they perceived themselves on the use of these 21st-centuryteaching and learning skills. A total of 147 pre-service teachers of Eastern Visayas State University Ormoc Campus were randomly chosen as respondents of the study and taken from the different courses. An adopted questionnaire was used to answer the questions and descriptive statistics were used to analyze the results of the study. The findings revealed that the pre-service teachers had utilized Always the different 21st–century skills except for Critical thinking and local connection which were often utilized, and global connections as sometimes utilized. The pre-service teachers perceived their extent of effectiveness in the use of the 21st – century skills as Average. More has to be done in the performance of the 21st – century teaching and learning skills for pre-service teachers. The teacher education department may further strengthen its program on teaching internship to better prepare the pre-service teachers for their role as 21st–century teachers.

Keywords:- Effectiveness, Learning Skills, Teaching, Psychological Study

1. Introduction

Life in the 21st century is muchmore complex than before. Rapid development in technology, globalization, migration, and political and environmental challenges have shifted the world to be more competitive and challenging. This urges people to develop frameworks focusing on 21st-century skills to adjust to the demands of the modern world. These skills have been recognized in various research studies such as that of Bentur et. Al, 2019; Marback-Ad, Egan, and Thompson, 2016; Trilling, B., & Fadel, C., 2009; Partnership for 21st Century Skills. Common 21st Century skills centered on collaboration, creativity, problem-solving, critical thinking, ICT, and socio-cultural competencies are crucial elements for 21st-century learners in acquiring success in future career paths.

Teachers are atthe forefront in the development of the learners' 21st-century skills (21 CS) thereby requiring them to be competent and 21st-century skilled as well. This puts demands on teacher education institutions that the future teachers will be producing likewise possessing the 21st - century skills. As Voogt et. al (2013) stated, it is of utmost importance todevelop the 21 CS of pre-service teachers during their teacher education studies so they can sufficiently support their learners in this area. Valli et al (2014) agreed that teachers must possess sufficient knowledge of pedagogical approaches that can effectively implement 21st-century education. Klassen et al (2018) likewise said that effective teachers guide, interact, and share knowledge with the learners, and together with their other personal characteristics and environmental factors, influence their professional characteristics and learners' outcomes. Hakkinin et al (2017) said that pre-service teachers should model these 21st-century skills education into their teaching thereby bringing their knowledge into real-life situations.Hence, during pre-service teaching, it is presumed that these pre-service teachersintegrate and put into practice the 21st-century skills in their teaching-learning process.

However, studies revealed that pre-service teachers are not fully prepared to teach21st-century students. According to Saavedra and Opfer (2012), the reason why there are challenges in theacquisition of the requiredskillsof teachers to meet the 21st - century education is that they are still accustomed to the use of the “transmission model” rather than the use of the “constructivist model”, thereby not providing many

opportunities to learners to apply knowledge learned in new contexts or allowing them to explore solutions to problems confronting them. They further said that 21st-century skills are not explicitly taught and are difficult to assess. Norrena, Kankaanranta and Nieminen (2011) revealed that schools and teachers do not have a concrete understanding of what 21st-century skills are and how can these be applied to students.

From these findings, it can be gleaned that much has to be explored on the attainment of 21st-century skills for learners and teachers. Teacher education institutions that are mandated to develop and prepare future teachers must provide the latter with the appropriate environments and support systems needed for their growth and development as 21st-century teachers. The regular assessment of the 21st-century skills in the teaching-learning processes is therefore of paramount importance in teacher education institutions to keep track of the pedagogical developments and teaching practices of future teachers.

Objectives of the Study:

1. Determine the extent of utilization of the pre-service teachers of the 21st-century teaching and learning skills in their teaching.
2. Determine the extent of effectiveness of the pre-service teachers in the utilization of the 21st - century teaching and learning skills.

2. Literature Review

Education is evolving every now and then. The knowledge, skills, and values learners ought to master and develop at present are much different than before (Trilling, B. and Fadel, C., 2009). Teacher education institutions which are responsible for producing teachers who will implement the appropriate knowledge, skills, and values to the learners must keep abreast with the educational changes going on over time. These teachers must acquire these skills to effectively use them in their teaching-learning process (Sumardi, L., Rohman, A., and Wahyudiate, D., 2020).

The 21st-century era characterized by increasingly complex societies and a globalized economy calls for the development and acquisition of the 21st - century skills for learners and teachers. These 21st-century skills enable them to think critically, effectively communicate with anyone, collaborate with others, have global and local mindsets, solve various and complex problems and engage effectively in digital technologies. Along this vein, the global education community has moved into these changes. This brought into an array of initiatives and research around the broad areas of the 21st - century skills (Trilling, B. and Fadel, C., 2009).

The Partnership for the 21st - Century Skills has developed a framework as the basis for learning in this 21st century. This framework was used in learning institutions in the United States and around the world and put a premium on 21st-century skills as the center of learning. The themes revolve around different key subject areas integrating into the teaching process of the 21st - century skills namely learning and innovation skills, information and technology skills, and career skills. Learning and innovation skills require students to use their critical minds in solving problems, communicating, and collaborating with peers and others, and creativity and innovation. Information and technology skills require students to develop their skills in information, media, and ICT for them to work effectively in this highly digitalized world. Aside from content knowledge, students must be socially and emotionally competent to work in complex life and environment. Ledward and Hirata (2011) supported the identified 21st-century skills mentioned and that required the blending and putting into practice these different skills into the educative process in order to succeed in daily and professional life.

The Metiri Group and NCREL, the American Management Association (AMA) of Colleges and universities, and the Organization for Economic Cooperation and Development have likewise provided frameworks for learning 21st-century skills and all approaches have similarities with P 21 which featured the core of learning and thinking skills, ICT literacy and life skills. Learning and thinking skills enable students to apply effectively and innovatively what they know. These skills are composed of critical thinking, communication, creativity and

innovation, collaboration, contextual learning and ICT. Life skills include self-direction, leadership, ethics, and others (Dede, C.,2020) .

In the Philippines, educational reforms were continuously implemented to address issues regarding students' performance and achievement attuned to the development of 21st CS. The Department of Education (DepEd) in its attempt to raise the standards of the educational system that is at par with other countries and be responsive to the needs of the people has implemented the K-12 program and has integrated the 21st - century skills approach into the K-12 program. Thus, DepEd Order No 21s (2019) was implemented to enhance the Basic education program (BEC) with the intention that students will be equipped with the appropriate learning skills, innovation skills, communication skills, life skills, information and technology skills. To achieve these goals, the curriculum must utilize instructional pedagogies that allow students to explore and inquire about knowledge, construct their own learning, work effectively with others, and capitalize on integrative and differentiated approach types of learning. Furthermore, DEPED issued DEPED Order no 42, series of 2017 which focuses on the national implementation of professional standards for teachers (PPST). Recognizing the critical roles of teachers in students' success in learning, DEPED established the appropriate professional standards that teachers need to possess aligned with the K-12 program and 21st-century learning framework. Figure 1 shows the interplay of skills, values, and the right attitude for learning resulting in the holistic development of the learners in basic education and higher education in preparation for life and career https://www.deped.gov.ph/wp-content/uploads/2017/08/DO_s2017_042-1.pdf).

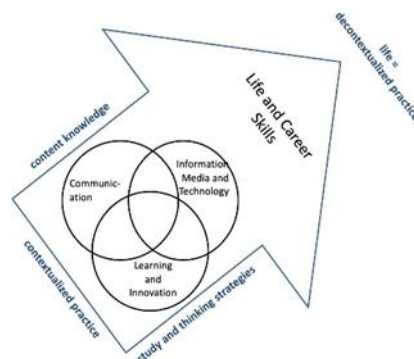


Figure 1 Holistic framework of Filipino Learner (Source: Scoular, C., 2020)

The present study was anchored on these dimensions of 21st-century skills to determine the extent of utilization and practices of pre-service teachers on these above-mentioned 21st-century skills.

3. Methodology

The study utilized descriptive research using a questionnaire adopted from the study of Ravitz, Jason (2014). This study was conducted in Eastern Visayas State University Ormoc City Campus (EVSU OC) during the deployment of the pre-service teachers in the SY 2022-2023. EVSU-Ormoc offers 4 courses under the Teacher Education department namely Bachelor of Elementary Education (BEED), Bachelor of secondary education (BSEd) major in Math and Science, Bachelor of Physical Education (BPEd), and Bachelor of Teaching in Technical and Vocational Education (BTVTEd). In the last semester of 4th year, the students were sent to their off-campus teaching in the Department of Education of Ormoc City Division to provide them opportunities to practice their profession in actual teaching situations except for the BTVTEd pre-service teachers. The latter had their off-campus teaching on the Campus.

There was a total of 147 pre-service teachers who were randomly chosen as respondents of the study. Of these respondents involved, 77.55 % (114) were females and 22.45 % (33) were males. Twenty-nine % (43) of them were BSED Science majors, twenty-two % came from BPEd (33) and BEED (32) , and 12 % (18) were from BTVTEd. Ethical considerations were made prior to the conduct of the study. A letter of request attached to the questionnaire was written to seek their consent and that all information given was treated with the utmost confidentiality.

Table 1. Extent of Utilization of Pre-service Teachers of the 21st-Century
 Teaching and Learning Skills

21 st Century Skills	Mean	Interpretation
1. Critical thinking	4.18	Often
2. Collaboration	4.40	Always
3. Communication	4.33	Always
4. Creativity and innovations	4.20	Always
5. Self-direction	4.30	Always
6. Global connections	3.20	Sometimes
7. Local Connections	3.93	Often
8. Technology	4.36	Always
Overall Mean	4.11	Often

As shown in the table, the pre-service teachers' extent of utilization of the different 21st-century teaching and learning skills is Often Utilized (4.11). This means that these skills were observed and executed in the conduct of their lessons in their off-campus teaching. This could be because these are the skills that are required of them from their cooperating schools to perform in their classes. Skills that were Always practiced were collaboration (4.4), use of technology (4.36), communication (4.33), Self-direction (4.30), and creativity and innovations (4.20). Collaboration got the highest mean score (4.40). This result agrees with the findings of Mugot, D. and Sumbalan, E. (2019); Burakgazi, S. et. Al (2019) and Tican, C. and Deniz. S. (2018) that pre-service teachers have utilized collaboration among peers to achieve the objectives of the lesson. This means that the pre-service teachers have provided opportunities for students to work in groups and discuss among themselves the activities or tasks given to them to carry out the objectives of the lessons. This is not surprising since an inquiry-based approach is now utilized in teaching, hence students work with their peers to achieve the lesson objectives. It can also be gleaned that technology was utilized Always in the classroom (4.36). Due to the COVID pandemic, the use of computers, the INTERNET, and other platforms became a necessity in the classroom. Thus, the use of technology in the classrooms is highly utilized by pre-service teachers as agreed in the study of Valtonen et al (2017). However, these findings were contrary to the study of Mugot, D. and Sumbalan, E (2019) where technology is only Utilized in some occasions.

Table 1 also shows that the pre-service teachers have provisions in their teaching the development of communication skills in their students with an overall mean of 4.33 interpreted as Always utilized. Since collaboration was always utilized in the classroom, it follows that provision for communication with students to discuss and collaborate among themselves was also practiced in the classroom. The overall result did not coincide with the findings of Alahmad, et al (2021) which revealed that pre-service teachers had low utilization of their communication skills. Furthermore, provisions for the development of self-direction skills and creativity and innovations were likewise Always utilized with mean scores of (4.30) and (4.20) respectively. This means that pre-service teachers had given their students responsibility by processing their own learning. Since students were given independence to work on their own learning, provisions for the development of their creativity and innovation skills were also observed in the classroom.

As gleaned in the same table, the pre-service teachers Often allowed their students to use their critical thinking to analyze or investigate questions or to draw conclusions based on appropriate reasoning (4.18). This result agreed with the findings of Mugot, D. and Sumbalan, E. (2019) that pre-service teachers provided provisions for critical thinking on all occasions in their classes. Also, as shown in the same table, pre-service teachers Often utilized (3.93) in their classes opportunities for students to develop their local connection skills. The pre-service teachers have provisions for their students to apply what they have learned to local contexts or community issues confronting them. This is usually part of the education curriculum where contextualization is integrated into the lessons so students will gain meaningful learning.

On the other hand, it is also noted in the same Table that the extent of utilization of the pre-service teachers on global connections strategies was only Sometimes utilized (3.31). The pre-service teachers had not given much attention in their teaching for students to understand global issues confronting them including awareness of the cultures, history, and geography of other countries. This is probably because the focus of the pre-service teachers is to carry out their learning objectives hence had limited opportunities to discuss or integrate global issues.

Table 2 Effectiveness of the Pre-service Teachers' Use of the 21st-Century Teaching and Learning Skills

21st Century Skills	Mean	Interpretation
1. Critical thinking	3.23	Average
2. Collaboration	3.90	High
3. Communication	3.25	Average
4. Creativity and innovations	3.20	Average
5. Self-direction	4.06	High
6. Global connections	3.31	Average
8. Local Connections	3.04	Average
9. Technology	4.18	High
Overall Mean	3.13	Average

Table 2 shows the extent of effectiveness of the pre-service teachers in the use of the 21st- century teaching and learning skills to their students is Average (3.24). The CS 21 skills pre-service teachers' found themselves highly effective in the use of technology (4.18), self-direction (4.06), and collaboration (3.90). Technology has been given much emphasis inside the classroom. During and after the pandemic, schools heavily relied on the use of technology in teaching since classes were already held online and later shifted to hybrid classes. Pre-service teachers utilized different learning platforms for maximum engagement of students' learning. This result supported the findings of previous research by Burakgazi, et al that pre-service teachers obtained high scores in the implementation of information and technology. It is also shown that the respondents had high-level of effectiveness in the use of collaboration and self-direction strategies in their teaching. This may be because the Department of Education (DepEd) where these pre-service teachers were trained and had conducted their pre-service off-campus teaching demanded to apply these skills in the planning and execution of their teaching. Pre-service teachers acted as facilitators of learning and not the main actors of learning. Hence, students work and

share knowledge among themselves providing them with opportunities for independent learning (DEPED, 2017).

It is also seen in the same table, that the respondents perceive themselves as average in the use of critical thinking (3.23), communication (3.25), creativity and innovation (3.20), global connection (3.20), and local connections (3.04). The pre-service teachers, although they have high utilization of these skills they seem not confident yet in their effectiveness in performing these skills in their classes. These findings were similar to the results of the studies of Putri et al (2017) and Alahmad, A. et al (2021) in which the pre-service teachers involved in their studies had low effectiveness in the use of their 21st-century skills. On the contrary, the studies of Goksun, D. and

4. Conclusions and Recommendations

The result of the study indicates that the pre-service teachers exhibit favorable outcomes with respect to the utilization of 21st-century teaching and learning skills. The 21st-century teaching and learning skills they Always use in their respective classes according to the rank of use are technology, collaboration, communication, self-direction, creativity, and innovation. Critical thinking and local connections strategies are often utilized in teaching while global connections strategies are sometimes utilized. However, the pre-service teachers perceive themselves as average in the use of the 21st-century teaching and learning skills in their classes. Skills they found themselves effective are in the use of technology, self-direction, and collaboration while the rest of the 21 CS are scored average.

From the results, it is implied that more must be done in the performance of the 21st – century teaching and learning skills for pre-service teachers. The teacher education department may further strengthen its program on teaching internship to better prepare the pre-service teachers for their roles and responsibilities so they can effectively perform their tasks as 21st-century teachers.

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