

Student Teachers and Cooperating Teachers' Practices in the 21st Century Classroom: Developing 21st Century Skills among Learners

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Abstract: The aim of the study is to determine the student teachers and cooperating teachers' practices in teaching 21st century skills among learners in the 21st century classroom. Specifically, the practices of the student teachers and cooperating teachers in teaching 21st century were clustered on the following areas: learning skills, literacy skills and life skills. With the use of descriptive method aided by survey-questionnaire as the main gathering tool, the data gathered were treated using descriptive and inferential statistics. The data revealed that student teachers and cooperating teachers practiced the development of 21st century skills among learners, particularly the learning skills or the 4 C's (critical thinking, creative thinking, collaborating and communicating); they applied the principles of 21st century skills in their respective classrooms, particularly in promoting higher-order thinking skills; there is a significant difference between the practices of student teachers and cooperating teachers in teaching 21st century skills among learners; and there is no significant difference between the application of student teachers and cooperating teachers on the principles of 21st century skills in their respective classrooms.

Keywords: 21st century skills, 21st century classroom, student teacher, cooperating teacher, K-12 curriculum.

I. INTRODUCTION

Today's learners are growing up in a fast-paced digital world. They multitask and network online at home and now expect the same experience at school [1]. With the advent of technology and the fast-paced development that revolutionized education in many ways, students are becoming more adept and expose to learning modalities, opportunities and achievement.

A growing number of business leaders, politicians, and educators are united around the idea that students need 21st century skills to be successful today [2]. Such need makes the school and the teachers in general to focus on the development of 21st century skills by providing learners opportunities to maximize their potentialities as individuals, making them capable of exemplifying the skills that are deemed necessary in order for them to succeed in life.

In that context, teachers play an integral role in making learners exemplify 21st century skills. Hence, 21st century skills need to be taught and integrated across the current curriculum by providing students with engaging learning opportunities in authentic contexts [3]. In doing such, the important tools that schools need to support a 21st century approach to teaching and learning include the usual suspects: the Internet, pen and paper, cell phones, educational games, tests and quizzes, good teachers, caring communities, educational funding, and loving parents [4].

Such endeavours lead learners to discover learning on their own and manage the pace of their learning, making it more relevant, useful and meaningful to them. As pointed out, the development of skills is of utmost importance to learners. Skill development involves tasks which allow students to continue their learning [5]. In developing such skills, the

activities or questions must be planned so as to enable the students to transcend from low level thinking to the more advance level [6]. Indeed, learners need to transpire what they have learned to meaningful and creative ways, leading to the discovery of new knowledge and practicalities.

The development of 21st century skills have improved the way how education is being delivered to the clientele by examining 21st century skills of students [7], determining practices that advocate for 21st century skills [8], noting evidence of 21st century knowledge and skills that create 21st century learning [9], and integrating technology [10], [11]. Such practicalities have enriched the delivery 21st century teaching and learning that benefitted the educational system in general.

In the Philippine context, the integration of developing 21st century skills among learners in the K-12 Curriculum marks the milestone in the goals of education to make every Filipino learner functionally literate and holistically developed. With the enactment of the Enhance Basic Education Act of 2013 (R.A. 10533) or K-12 Law, the promotion of developing 21st century skills among Filipino learners has been institutionalized.

Moreover, with the in-service training provided to student teachers (STs), they were able to experience the application of 21st century teaching as exhibited by their respective cooperating teachers (CTs). It is more likely that through the ways how their cooperating teachers developed 21st century among learners that these future teachers will be able to apply the said practice in their future 21st century classroom, making them prepared enough once they have officially entered the teaching profession.

With such realities, it is the aim of the study to describe how student teachers and cooperating teachers practice the teaching of 21st century skills among learners in their respective classrooms. Specifically, the practices of student teachers and cooperating teachers in teaching 21st century skills were clustered on the following areas: learning skills, literacy skills, and life skills. Moreover, a comparative presentation on the practices of student teachers and cooperating teachers was also highlighted in the study. Hence, this study will not only foster awareness and comparison on the practices of student teachers and cooperating teachers in developing 21st century skills, but also will make every Filipino learner ready for continuing education, finding decent work, and venturing to business of their own.

II. METHODOLOGY

A. Research Design

The study utilized the descriptive method of research in detailing the practices of student teachers and cooperating teachers in teaching 21st century skills among learners in the 21st century classroom. The use of such design permits the researchers to present the all-about of the problem under investigation by describing the areas where student teachers and cooperating teachers are able to develop 21st century skills among learners.

B. Respondents

The respondents of the study were 674 individuals, to which 337 or 50% are student teachers of Bataan Peninsula State University-Dinalupihan Campus, taking up Bachelor of Elementary Education (BEEd) and Bachelor of Secondary Education (BSEd) and their 337 or 50% are cooperating teachers, both in the public elementary and secondary schools of Dinalupihan, Bataan province. They were all selected as respondents in order to come up with a comprehensive presentation of data explaining the problem being investigated.

C. Instrument

In order to gather the data needed in the study, the researchers utilized survey-questionnaire composing of 2 parts. Part 1 described the practices of student teachers and cooperating teachers in developing 21st century skills among learners, while Part 2 focused in applying the principles of 21st century skills in the classroom. Clustering of skills in Part 1 of the survey-questionnaire were adapted from Thoughtful Learning [12].

D. Data Collection

After the approval by the school authorities and the consent of the respondents, the survey-questionnaires were administered accordingly. They were given ample time in answering all the statements incorporated in the instrument. A 100% retrieval of the survey-questionnaire was then secured.

E. Ethical Consideration

Since the nature of the survey-questionnaire and the intention of the study may affect the way how the respondents scored their practices as student teachers and cooperating teachers, clarifications on the utility of the gathered data were made feasible. That was done by assuring the anonymity and confidentiality of the collected data and their utility for the very purpose of writing the study and enriching the educational practice.

F. Statistical Treatment of Data

In analysing and interpreting the data gathered, descriptive statistics such as frequency, percentage and mean were used along with inferential statistics such as t-test. Frequency count and percentage were used in describing the profile of the respondents. Mean was used in detailing the practices in developing 21st century skills among learners and applying the principles of 21st century skills in the teaching of student teachers and cooperating teachers in their respective classrooms. Likewise, the following scales with descriptive equivalent and interpretation were used:

Scale of Means	Point Scale	Descriptive Rating	Interpretation
4.21 – 5.00	5	A – Always	HP / HA – Highly Practiced / Applied
3.41 – 4.20	4	O – Often	P / A – Practiced / Applied
2.61 – 3.40	3	So – Sometimes	MP / MA – Moderately Practiced / Applied
1.81 – 2.60	2	Se – Seldom	LP / LA – Less Practiced / Applied
1.00 – 1.80	1	N – Never	NP / NA – Not Practiced / Applied

More so, t-test was used in determining the significant difference between the practices of developing 21st century skills among learners by student teachers and cooperating teachers and in applying the principle of 21st century skills in the classroom. Likewise, with regards to testing the hypothesis, the researchers set 0.05 level of alpha or the critical value. Using the Statistical Packages for the Social Sciences (SPSS), the actual significance or p-values were shown and readily compared with 0.05 level. P-values less than or equal to 0.05 were considered significant. If the statistical value is significant, the null hypothesis is rejected; otherwise, it is accepted.

III. RESULT AND DISCUSSION

For clarity of presentation, the data gathered were presented in order and sequence of the basic questions presented in the statement of the problem of the study.

A. Practices in Teaching 21st Century Skills

TABLE I: PRACTICES OF STUDENT AND COOPERATING TEACHERS IN DEVELOPING 21ST CENTURY SKILLS

21 st Century Skills	Student Teachers	Cooperating Teachers	Total	Interpretation
Learning Skills	3.88 (P)	3.99 (P)	3.94 (P)	Practiced
Critical thinking	3.89 (P)	3.99 (P)	3.94 (P)	Practiced
Creative thinking	3.81 (P)	4.02 (P)	3.92 (P)	Practiced
Collaborating	4.03 (P)	4.07 (P)	4.05 (P)	Practiced
Communicating	3.80 (P)	3.90 (P)	3.85 (P)	Practiced
Literary Skills	3.74 (P)	3.98 (P)	3.86 (P)	Practiced
Information literacy	3.80 (P)	3.82 (P)	3.81 (P)	Practiced
Media literacy	3.73 (P)	4.17 (P)	3.95 (P)	Practiced
Technological literacy	3.70 (P)	3.96 (P)	3.83 (P)	Practiced
Life Skills	3.47 (P)	3.86 (P)	3.67 (P)	Practiced
Flexibility	3.70 (P)	3.83 (P)	3.77 (P)	Practiced
Initiative	3.72 (P)	3.95 (P)	3.84 (P)	Practiced
Social skills	3.69 (P)	3.88 (P)	3.79 (P)	Practiced
Productivity	3.06 (MP)	3.97 (P)	3.52 (P)	Practiced
Leadership	3.19 (MP)	3.68 (P)	3.44 (P)	Practiced
Composite Mean	3.68 (P)	3.94 (P)	3.81 (P)	Practiced

Significantly, student teachers (3.68) and their cooperating teachers (3.96) both practiced the development of 21st century skills among their learners as indicated by the general average weighted mean of 3.82. Notably, student teachers and cooperating teachers primarily developed learning skills which composed of 4 C's (critical thinking, creative thinking, collaborating and communicating) with a weighted mean of 3.88 and 3.99, respectively and as reflective by the average weighted mean of 3.94. Undeniably, the development of 4 C's among learners is very crucial. The rate of change in technology and in society is so rapid that to prepare young people to live, work and be successful in the 21st century, they will need the ability to think both creatively and critically, problem-solve and work collaboratively [13].

B. Applying the Principles of 21st Century Skills in the 21st Century Classroom

TABLE II: APPLYING THE PRINCIPLES OF 21ST CENTURY SKILLS IN THE CLASSROOM

Aspects of Teaching	Student Teachers	Cooperating Teachers	Total	Interpretation
Achieving instructional objectives.	3.77 (A)	3.86 (A)	3.82 (A)	Applied
Gathering and sorting of information from various sources.	3.88 (A)	3.92 (A)	3.90 (A)	Applied
Imparting knowledge.	3.97 (A)	3.86 (A)	3.92 (A)	Applied
Promoting higher-order thinking skills.	3.96 (A)	4.04 (A)	4.00 (A)	Applied
Promoting independent, self-regulated and metacognitive learning.	3.96 (A)	3.79 (A)	3.88 (A)	Applied
Utilizing various approaches, methods, strategies and techniques.	3.83 (A)	3.86 (A)	3.85 (A)	Applied
Utilizing various instructional materials and assessment tools.	3.81 (A)	3.84 (A)	3.83 (A)	Applied
Managing the classroom.	3.78 (A)	3.88 (A)	3.83 (A)	Applied
Dealing with students' behaviour.	3.59 (A)	3.83 (A)	3.71 (A)	Applied
Assessing and evaluating students' activities and performances.	3.69 (A)	3.73 (A)	3.71 (A)	Applied
Composite Mean	3.82 (A)	3.86 (A)	3.84 (A)	Applied

Evidently, student teachers (3.82) and their cooperating teachers (3.86) both applied the principles of 21st century skills in their respective classrooms as indicated by the general average weighted mean of 3.84. Notably, student teachers primarily applied the concepts of 21st century skills in imparting knowledge (3.97), while their cooperating teachers primarily applied them in promoting higher-order-thinking skills. Generally, the principles of 21st century skills are being applied in promoting higher-order thinking skills in the classroom as reflective by the average weighted mean of 4.00. As reiterated, higher order thinking skills are needed to be developed among learners as it involves abstract intellectual processes and operations. Thinking is a process involving such mental operations as induction deduction, classification and reasoning. Thinking is the ability to analyze, criticize and to reach conclusions based on sound inference or judgment [14].

C. Significant Difference on the Practices of Student Teachers and Cooperating Teachers in Teaching 21st Century Skills

TABLE III: SIGNIFICANT DIFFERENCE ON THE PRACTICES OF STUDENT AND COOPERATING TEACHERS IN TEACHING 21ST CENTURY SKILLS

Group	Descriptives			Independent Samples T-Test		
	N	Mean	Std. Deviation	t	Sig.	Remarks
Student Teachers	337	3.68	0.28	3.62	0.00	Significant; Reject Ho
Cooperating Teachers	337	3.94	0.13			

Noticeably, there is a significant difference between the practices of student teachers and cooperating teachers in teaching 21st century skills among learners as suggested by the t-value which is significant at 0.05 level, i.e. lower than 0.05 level. Overall, since the practices of cooperating teachers have higher mean of 3.94 compared to the student teachers with 3.68,

the t-value of 3.62 significant at 0.00 suggests significant difference between these two (2) groups. Hence, there is a significant difference between the practices of student teachers and cooperating teachers in teaching 21st century skills among learners. Thus, the null hypothesis of no significant difference is rejected.

D. Significant Difference in Applying the Principles of 21st Century Skills in the Classroom

TABLE IV: SIGNIFICANT DIFFERENCE IN APPLYING THE PRINCIPLES OF 21ST CENTURY SKILLS IN THE CLASSROOM

Group	Descriptives			Independent Samples T-Test		
	N	Mean	Std. Deviation	t	Sig.	Remarks
Student Teachers	337	3.82	0.12	-1.08	0.31	Not Significant; Accept Ho
Cooperating Teachers	337	3.86	0.08			

As a whole, there is no significant difference found between the application of the principles of 21st century skills in the classroom by student teachers (3.82) compared to their cooperating teachers (3.86). The t-value of -1.08 is not significant at 0.31 level; hence, no remarkable significant difference has been accounted and so the null hypothesis is accepted. Thus, no significant difference between the application of the principles of 21st century skills by student teachers and cooperating teachers in the classroom can be inferred.

IV. CONCLUSION AND RECOMENDATION

In the light of the findings of the study, the researcher arrived at the following conclusions:

1. Student teachers and cooperating teachers practiced the development of 21st century skills among learners, particularly the learning skills or the 4 C's (critical thinking, creative thinking, collaborating and communicating).
2. Student teachers and cooperating teachers applied the principles of 21st century skills in their respective classrooms, particularly in promoting higher-order thinking skills.
3. There is a significant difference between the practices of student teachers and cooperating teachers in teaching 21st century skills among learners.
4. There is no significant difference between the application of student teachers and cooperating teachers on the principles of 21st century skills in their respective classrooms.

In light of the findings, the following recommendations are hereby proposed:

1. Student teachers and cooperating teachers should diligently conduct the profiling of the students using standardized assessment tools in order to identify the strengths and weaknesses of learners. Such profiling should be directed upon the attainment of necessary life skills needed by the learners in making themselves successful in their future career endeavours.
2. Student teachers and cooperating teachers should find more creative and innovative ways in applying the principles of 21st century skills in their classrooms, particularly in the utility of such skills in dealing with students' behaviour and in evaluating and grading their activities and performances.
3. More trainings and seminars should be conducted in the mainstreaming of 21st century teaching and learning in the 21st century classroom.
4. Mentoring program should be conducted in assuring that the principles of 21st century teaching and learning are being applied in the classroom.
5. Evaluation materials on the development and application of 21st century skills in the 21st classroom should be created and implemented.
6. A replication of the study should be made feasible to assess further the practices of both student teachers and cooperating teachers in developing and applying the principles of 21st century skills.

ACKNOWLEDGEMENT

The researchers extend their gratitude to the student teachers and cooperating teachers who willingly shared their time and effort in making this research possible.

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APPENDIX - A

Survey-Questionnaire

Part I. Practices in Developing 21st Century Skills

Direction: This evaluation is to appraise your practices in developing 21st century skills among learners. Please rank in the basis of your own practices by encircling the appropriate score using the following alternatives:

Scale of Means	Point Scale	Descriptive Rating	Interpretation
4.21 – 5.00	5	A – Always	HP – Highly Practiced
3.41 – 4.20	4	O – Often	P – Practiced
2.61 – 3.40	3	So – Sometimes	MP – Moderately Practiced
1.81 – 2.60	2	Se – Seldom	LP – Less Practiced
1.00 – 1.80	1	N – Never	NP – Not Practiced

21 st Century Skills*	Scale				
Learning Skills	5	4	3	2	1
Critical thinking	5	4	3	2	1
Creative thinking	5	4	3	2	1
Collaborating	5	4	3	2	1
Communicating	5	4	3	2	1
Literary Skills	Scale				
Information literacy	5	4	3	2	1
Media literacy	5	4	3	2	1
Technological literacy	5	4	3	2	1
Life Skills	Scale				
Flexibility	5	4	3	2	1
Initiative	5	4	3	2	1
Social skills	5	4	3	2	1
Productivity	5	4	3	2	1
Leadership	5	4	3	2	1

Skills Guide:*A. Learning Skills [15]**

- 1. Critical Thinking.** It is the focused, careful analysis of something to better understand it.
- 2. Creative Thinking.** It is the expansive, open-ended invention and discovery of possibilities.
- 3. Collaborating.** It is expressed in allocating resources and responsibilities, brainstorming ideas, decision-making, delegating, evaluating the products, processes, and members of the group, goal setting, leading a group, managing time, resolving conflicts, and team building.
- 4. Communicating.** It is expressed in analysing the situation, evaluating messages, following conventions, listening actively, reading, speaking, turn taking, using technology in communicating, and writing.

B. Literacy Skills [16]

- 1. Information Literacy.** It involves traditional skills such as reading, researching, and writing; but new ways to read and write have also introduced new skills such as consuming and producing information.
- 2. Media Literacy.** It involves understanding the many ways that information is produced and distributed.
- 3. Technology Literacy.** It involves the skills of the students in harnessing the power of new technology and be inspired to learn evaluate this new information and how to use these new tools to create effective, well-grounded communication.

C. Life Skills [17]

1. **Flexibility.** It involves the skills of students to learn to quickly analyse what is going on around them and make adjustments on the fly – all the while keeping their goals at the forefront of their minds.
2. **Initiative.** It is the willingness to step forward with an idea and take the risk of bringing it to fruition.
3. **Social Skills.** These involve students' collaboration with others by means of cooperation, compromise, decision making, communicating, using emotional intelligence, using constructive criticism, trusting others, delivering on promises, and coordinating work.
4. **Productivity.** It involves the skills of the students to produce more outputs by using the inquiry process and developing projects.
5. **Leadership.** It is a suite of related skills that combines the other life skills like taking initiative, having strong social skills, flexibility, and productivity. This is also being reflected in terms of identifying goals, inspiring others to share those goals, organizing a group so that all members can contribute according to their abilities, resolve conflicts among members, encouraging the group to reach their goals, helping group members solve problems and improve performance, and giving credit where it is due.

Part II. Applying the Principles of 21st Century Skills in the Classroom

Direction: This evaluation is to appraise your application of 21st century skills in your respective classroom. Please rank in the basis of your application on the listed areas of teaching by encircling the appropriate score using the following alternatives:

Scale of Means	Point Scale	Descriptive Rating	Interpretation
4.21 – 5.00	5	A – Always	HA – Highly Applied
3.41 – 4.20	4	O – Often	A – Applied
2.61 – 3.40	3	So – Sometimes	MA – Moderately Applied
1.81 – 2.60	2	Se – Seldom	LA – Less Applied
1.00 – 1.80	1	N – Never	NA – Not Applied

Aspects of Teaching	Scale				
Achieving instructional objectives.	5	4	3	2	1
Gathering and sorting of information from various sources.	5	4	3	2	1
Imparting knowledge.	5	4	3	2	1
Promoting higher-order thinking skills.	5	4	3	2	1
Promoting independent, self-regulated and metacognitive learning.	5	4	3	2	1
Utilizing various approaches, methods, strategies and techniques.	5	4	3	2	1
Utilizing various instructional materials and assessment tools.	5	4	3	2	1
Managing the classroom.	5	4	3	2	1
Dealing with students' behaviour.	5	4	3	2	1
Assessing and evaluating students' activities and performances.	5	4	3	2	1