

Pedagogical Strategies for Online Learning in Public Secondary Schools

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Abstract. This study examines the pedagogical strategies public secondary school teachers employed in Cabanatuan City for online learning. A descriptive survey design was used to gather data from teachers aged 21-30, with females constituting the majority. Most respondents were single and had less than 5 years of teaching experience. The research identified several key pedagogical strategies used by teachers: graphic organizers, self-questioning, cooperative learning, problem-solving and research activities, and mnemonics. Interestingly, the study revealed significant relationships between specific teacher characteristics and certain strategies. Age and sex were linked to the use of graphic organizers and self-questioning. Similarly, teaching experience correlated with the utilization of cooperative learning. Finally, the grade level taught influenced the implementation of problem-solving/research activities and mnemonics. These findings suggest that factors like age, sex, experience, and grade level may influence the choice of online learning strategies. Further research could explore these relationships in more detail. The study highlights the diverse approaches teachers are adopting to engage students in the online environment.

Keywords: Online Learning; Pedagogy; Public Secondary Schools; Strategy; Teachers

1. Introduction

In the classroom, the teacher is the most important character. The school's success and its students in terms of educational growth depends on the teacher's active awareness and leadership in implementing its plans. The teacher is then expected to implement approaches and procedures that create a meaningful and conducive environment for the educational process to succeed. According to Figley et al. (2012), Teachers should assist in formulating school goals and the allocation of resources required to achieve the desired teaching-learning environment. A teacher's involvement in increasing relevant education and learning is another obligation. He should observe what happens in the classroom to figure out how to help students learn more successfully. He must support students in developing a plan for selecting methods, materials, and evaluation procedures to improve their performance. Furthermore, he must establish positive relationships with learners to communicate with them about beneficial learning objectives.

The COVID-19 pandemic has caused damage to education systems in the Philippines and around the world. While we constantly hear about the challenges that parents and learners have regarding online learning, teachers also face challenges. From lesson planning to conducting courses and assigning

assignments, teachers must ensure that the quality of learning is maintained even in the absence of face-to-face experiences. (Mayol, 2020). Saxena (2020) has specified that this pandemic dramatically transformed the education system and brought about a change in teaching and learning methodology, which obliges educational institutions across the globe to recreate traditional learning in classrooms and to transition to an online way of teaching so that education and knowledge are opened continuously. Education in this pandemic was undoubtedly the silver lining. In this time of the pandemic, teachers serve as beacons of light that lead students on a path of discovery. As guides in this learning path, teachers continuously search for and use different models of instruction that enable learners to achieve the curriculum objectives and increase their academic performance. Queens University of Charlotte (2021) has stated that you need more than a passion for learning and teaching students to be an effective educator. Specific abilities and experience with established classroom procedures are also required to motivate learners and maximize their learning potential, in addition to enthusiasm and dedication. Educators can use new ideas and instructional approaches to boost learning and stimulate children's natural hunger for knowledge.

Teaching and learning frameworks are evidence-based models for course design that assist instructors in aligning learning objectives with classroom activities, creating inspiring and inclusive settings, and incorporating evaluation into the learning process. Frameworks like Backward Design can be simply altered and blended to act as conceptual maps for designing or updating any course, curriculum, or lesson." Students learn best when: (a) "their prior knowledge and "preconceptions" are recognized and engaged", (b) "they have practice and time to build "conceptual frameworks" upon foundational knowledge through active, experiential, and contextually varied learning", and (c) "they have practice and time to "take control of their own learning" (National Research Council, 2020). Classroom activities that combine lecturing with debate, active learning, and self-reflection are common in teaching and learning frameworks. L. The instructional frameworks provide learners with diversifies, scaffolded, approaches that help them "build knowledge structures that are precisely and meaningfully organized" while also determining "when and how to use the skills and knowledge they learn" (Ambrose et. al., 2010). Instead of focusing on content delivery, "Learning" emphasizes structures for ongoing student development, inviting students to be "co-producers" in the classroom (Barr and Tagg, 1995).

Research Problem

The study aimed to describe the pedagogical strategies private school teachers employ in online learning that will serve as a basis for a proposed instructional framework in the new normal education.

Specifically, the study seeks answers to the following questions:

1. How may the socio-demographic profile of the respondents be described in terms of:
 - 1.1 Age
 - 1.2 Sex

- 1.3 Civil Status
- 1.4 Highest Educational Attainment
- 1.5 Length of Teaching Experience
- 1.6 Academic Rank
2. How may the pedagogical strategies used by the teacher respondents be described?;
3. Is there any significant relationship between and among the assessment of the teacher respondents on their use of pedagogical strategies and their demographic profiles?;

4. Methodology

A descriptive survey research design was employed in this study to describe pedagogical approaches used in public secondary schools. The respondents of this research study were the public secondary school teachers in the Department of Education, City Schools Division of Cabanatuan. They may serve as respondents of this study, which aimed to identify and explain the pedagogical tactics used by public school teachers in online learning.

Selection of the respondents was done through total sampling that involves examining the entire population of the public secondary school teachers in the division of Cabanatuan City.

5. Results and Discussion

5.1. The Socio-Demographic Profile of the Respondents

5.1.1. Age

Table 1.
Distribution of Respondents' Age

AGE	<i>f</i>	%
21 to 30 years old	103	85.8
31 to 40 years old	16	13.3
41 years old and above	1	0.8
Total	120	100.0

It can be shown from the table 1 that the respondents have ages ranging from 21 years old to 41 years old and above. 85.8% of the total respondents have ages of 21 to 30 years old. It is followed by the ages of 31 to 40 years old that gathered 13.3% of the total respondents. The respondents whose age is 41 years old and above comprised only 1 of 120 or 0.8% of the total teacher respondents. The

results show that the most of the respondents are between the ages of 21 and 30, indicating that they are in the adult age category. The age profile of the teaching force reflects not only the supply of teachers and the rate of renewal of the teaching force, but also provides a proxy for teaching experience. For countries with a very young teaching force, questions related to experience, staff turnover and guidance arise, while for countries with large numbers of teachers in their forties or fifties there are implications for future teacher shortages, and other questions of how to adapt teacher qualifications to changes in demand arise, not least in the rapidly changing area of information and communications technology (ICT). Finally, countries with large numbers of older teachers reaching retirement age need to be concerned with forward planning of teaching staff requirements (Siniscalco, 2012). They frequently share many of the same experiences as other people their age. An outcome of a cultural generation is a set of shared values, beliefs, and attitudes that are important to consider when preparing an activity (Lumen Learning, 2020).

5.1.2. Sex

Table 2.
Distribution of Respondents' Sex

Sex	<i>f</i>	%
Male	58	48.3
Female	62	51.7
Total	120	100.0

Table 2 describes the respondents' sex based on their biological assignments of male and female. 51.7% of the total respondents are female and 48.3% are male. It can be shown that more than half of the primary teacher-respondents are mostly female and have a larger number than the male which shows 3.4% of difference. One of the most important demographic categories, according to Vostrikova (2014), is the gender distribution of the population. In demographic statistics, the study of sex structure plays a significant role. In the first place, age and sex structure indices play an essential role in the system of indices of the plan for the development of our socialist society's economic and cultural life. These variables increase the demand for statistics on the changing gender and age distributions of the population, as well as projections for the future.

5.1.3. Civil Status

Table 3.
Distribution of Respondents' Civil Status

Civil Status	<i>F</i>	%
Single	82	68.3
Married	38	31.7
Total	120	100.0

Table 3 presents the civil status of the respondents. The data shows that the 68.3% of the total respondents are single. It is more than half of the 120 of the total teacher-respondents. The teacher-respondents in this study who are married are comprised of 31.7%. It can be gleaned from the result that majority of the public secondary school teachers employed in in division of cabanatuan city are single.

5.1.4. Highest Educational Attainment

Table 4.
Distribution of Respondents' Highest Educational Attainment

Highest Educational Attainment	F	%
Bachelor's Degree	98	81.7
MA/MS Units	13	10.8
MA/MS Graduate	9	7.5
Total	120	100.0

Table 4 presents the highest educational attainment of the respondents in this study. It is presented that 81.7% of the respondents have their bachelor's degree, 10.8% have earned units in degree of master of arts or master of science. The respondents who have their master's degree consist of 9 of 120 or 7.5% of the total respondents. It can be implied from the result that most of the public secondary school teachers employed have finished their bachelors' degree. In addition, graduates of non-education degree programs who want to teach Science in the Senior High School have a chance to teach because Republic Act 7836 (The Licensure Examination for Teachers Law), along with Article II of CMO 30, s. 2004, states that graduates of non-education degrees only has to take 18 units of professional education courses and 12 units of experiential learning courses (Field Study and Practice Teaching) to qualify for the Licensure Examination for Teachers (LET). Moreover, getting a Master's degree is an excellent way to enrich and advance in a teaching career: it prepares one to be an expert teacher. Further, a teaching degree also helps students in many ways by preparing the teacher to be the best teacher and ensuring that students learned (The Professional Development of Teachers, 2009). Schools need highly qualified and expert teachers to improve quality education. "Pursuing a Master of Arts in Teaching (MAT) or a Master of Education (MAEd) degree can also help a teacher be a better teacher". These degrees focus on teaching teachers on how to be enrich their pedagogy, teaching methods, philosophy of education and educational technology (USC University California, 2015). Possession of post-graduate degree and attendance to professional development, such as trainings and seminars, contribute to the improvement of teaching strategies employed by teachers, as these make teachers confident in the practice of their profession. Training also plays an important role in teachers and in their utilization of instructional strategies, because through trainings, the teachers' knowledge, ideas, and skills are re-shaped, re-practiced, and re-constructed (Rahman, et. al., 2011). Lee

(2018) has found that teacher quality is the most influential factor that determines student success. Ukpanupong (2017) stated that a strong background in the subject for teachers is a necessary and important indicator of their ability to teach the subject. He has observed that teachers' knowledge on the subject matter is positively related to the student's achievements. Subject matter specialization is absolutely essential and indispensable for every teacher. Generally, it is assumed and expected that a teacher must acquire a reasonable measure of knowledge of the subject in order to reasonably cope with the demands of teaching.

5.1.5. Length of Teaching Experience

Table 5.
Distribution of Respondents' Length of Teaching Experience

Civil Status	<i>f</i>	%
Less than 5 years	97	80.8
5 to 10 years	21	17.5
11 to 15 years	1	.8
16 to 20 years	1	.8
Total	120	100.0

Table 5 presents the length of teaching experience of the respondents. The data shows that the 80.8% of the total respondents have less than five (5) years of teaching experiences. 17.5% of the total respondents have 5-10 years of teaching experience. The respondent whose whose teaching experience are 11 to 15 years and 16 to 20 years both gathered a 0.8% or 1 of 120 total respondent. This results implied that most of the primary school teachers employed in the division of Cabanatuan City are new in their teaching career. Throughout a teacher's career, student success gains are favorably associated with teaching experience. Gains in teacher effectiveness linked to experience are greatest in a teacher's early years, but they continue to be considerable as teachers enter their second, and often third, decades (Kini, Tarra and Podolsky, Anne, 2016). Experienced teachers develop internal cognitive strategies that help them organize, plan, deliver, and evaluate learning activities more effectively and efficiently.

5.1.6. Academic Rank

Table 6.
Distribution of Respondents' Academic Rank

Civil Status	<i>f</i>	%
Teacher 1	97	80.33
Teacher 2	17	14.17
Teacher 3	6	5.00
Total	120	100.0

Table 6 presents the length of teaching experience of the respondents. The data shows that 80.33% of the total respondents academically rank as “teacher 1”. The respondents whose academic rank are “teacher 2” comprised of the 14.17% and 5% are academically rank as “teacher 3” of the total respondents. It can be gleaned from the results that most of the secondary school teachers employed in the in the division of cabanatuan city has a position as teacher 1.

5.2. Pedagogical Strategies Used by the Respondents

Table 7.

Distribution of Respondents’ Pedagogical Strategies Employed in Online Education

Pedagogical Strategies	Mean	Verbal Interpretation
1. Graphic Organizers	3.60	Always
2. Role Playing	3.53	Always
3. Problem Solving and Research Activities	3.61	Always
4. Mnemonics	3.68	Always
5. Self-questioning	3.55	Always
6. Interactive Multimedia Learning Environments	3.59	Always
7. Modeling	3.61	Always
8. Identifying Difficulty	3.71	Always
9. Self-assessment	3.71	Always
10. Keeping a Thinking Journal	3.71	Always
11. Children Teaching Children/Cooperative Learning	3.75	Always
12. Labeling Students’ Behaviors	3.61	Always
13. Reflective Questions	3.74	Always
14. Reflective Prompts	3.57	Always
15. Thinking aloud and self-explanations	3.68	Always
16. Using Class Assessment Tools/One-minute paper	3.62	Always
17. Reflective Writing	3.64	Always
18. Cooperative learning	3.51	Always
19. Inquiry-based instruction	3.62	Always
20. Differentiation/Differentiated Learning	3.69	Always

21. Technology-based/ ICT integration	3.63	Always
22. Behavior Management Strategy	3.66	Always
23. Contextualization	3.65	Always
24. Interdisciplinary Approach	3.70	Always
25. Direct Instruction	3.64	Always
26. Flipped Classrooms	3.76	Always
27. Kinesthetic Learning	3.66	Always
28. Expeditionary Learning	3.73	Always
29. Personalized Learning	3.70	Always
30. Game-Based Learning	3.75	Always

Legend: 3.26 – 4.00 (Always Employed); 2.51 – 3.25 (Often Employed); 1.76 – 2.50 (Sometimes Employed); and 1.00 – 1.75 (Never Employed)

There were 30 pedagogical strategies assessed by the respondents based on how they frequently employed these in an online learning. According to the results of the survey, among the 30 pedagogical strategies stated, the flipped classroom approach had the highest weighted mean of 3.76. This weighted mean is verbally interpreted as **“always employed”**. This was followed by Children Teaching Children/Cooperative Learning and game-based learning which both collected a weighted mean of 3.75 and verbally interpreted as **“always employed”**. Reflective Questions gathered a third highest weighted mean of 3.74 among the assessed pedagogical strategies, which is verbally interpreted as **“always employed”**. Role playing gathered the lowest weighted mean of 3.53 among the 30 assessed pedagogical strategies. The gathered weighted mean of the role playing as pedagogical strategies, still attained a verbal interpretation of **“always employed”**. The weighted means of the 30 assessed pedagogical strategies were all verbally interpreted as “always employed”. It can be implied from the results that all indicated pedagogical strategies are **“always employed”** by primary teachers employed in the private schools in the division of Cabanatuan City during the online learning of the students. A well-thought-out pedagogy can assist students get a better understanding of essential content and improve the quality of your teaching. Being aware of how you teach will help you better understand how to assist students in gaining a deeper understanding. As a result, it has the potential to influence student perception, resulting in cooperative learning environments. The appropriate technique can help pupils progress beyond fundamental memory and understanding, as defined by Bloom's taxonomy, to more complicated learning processes like analysis, assessment, and creation. Students can take advantage of their chosen learning styles by having a teaching approach that accommodates them and their preferred learning patterns (Persaud, 2021). According to Halili and Zainuddin (2015), the flipped classroom, also known as the reverse classroom approach, is a type of blended learning that combines face-to-face learning in the classroom through

group discussion with distance learning outside the classroom through asynchronous video lessons and online collaboration. Pre-recorded video lectures are utilized in the "flipped learning" process to increase the efficiency and efficacy of face-to-face classroom activities (Yoshida, 2016). According to Sams & Bergmann (2012), the flipped classroom is best known as a learner-centered approach to learning in which students are more active in the classroom activity than the teacher. The teacher serves as a facilitator in this situation, motivating, guiding, and providing feedback on the students' performance. As a result, by reversing or flipping the class, students will have extra time to address problems on their own or cooperatively with peers via distant learning. According to Zainuddin and Attaran (2015), using the flipped classroom approach leads to a better understanding of technology use in teaching and learning activities: students will use various technology media in independent learning activities, while lecturers will use various technology media in their teaching practices. Game features and principles are interwoven within learning activities in game-based learning. In a nutshell, game-based learning is the process of learning by playing games. Game-based integration tactics differ depending on the educator's teaching philosophy, the learners' specific skills, the instructional program's needs, and accessible resources. Some newcomers to game-based learning may struggle to understand how games are employed during education (Schaaf, 2021).

5.3. Significant relationship between and among the assessment of the teacher respondents on their use of pedagogical strategies and their demographic profile

Table 8.

Significant Relationships between and among the Variables

Pedagogical Strategies	Socio-Demographic Profile					
	A	S	CS	LTS	HEA	AR
Graphic Organizers	0.004	0.008	0.682	0.131	0.664	0.312
Role Playing	0.562	0.595	0.419	0.095	0.900	0.723
Problem Solving and Research Activities	0.314	0.482	0.600	0.095	0.527	0.099
Mnemonics	0.096	0.690	0.537	0.040	0.585	0.265
Self-questioning	0.000	0.008	0.978	0.376	0.815	0.373
Interactive Multimedia Learning Environments	0.368	0.264	0.681	0.152	0.558	0.374
Modeling	0.322	0.144	0.760	0.962	0.686	0.575
Identifying Difficulty	0.775	0.981	0.112	0.308	0.464	0.733
Self-assessment	0.765	0.234	0.766	0.152	0.443	0.041

Keeping a Thinking Journal	0.917	0.542	0.977	0.849	0.421	0.415
Children Teaching						
Children/Cooperative Learning	0.479	0.858	0.176	0.580	0.818	0.665
Labeling Students' Behaviors	0.248	0.187	0.438	0.008	0.119	0.848
Reflective Questions	0.291	0.542	0.116	0.478	0.300	0.580
Reflective Prompts	0.944	0.303	0.312	0.307	0.142	0.746
Thinking aloud and self-explanations	0.601	0.469	0.991	0.810	0.962	0.749
Using Class Assessment Tools/One-minute paper	0.043	0.761	0.471	0.950	0.775	0.214
Reflective Writing	0.213	0.037	0.210	0.066	0.480	0.403
Cooperative learning	0.406	0.320	0.264	0.002	0.169	0.121
Inquiry-based instruction	0.206	0.083	0.191	0.166	0.312	0.321
Differentiation/Differentiated Learning	0.537	0.543	0.804	0.736	0.207	0.638
Technology-based/ ICT integration	0.529	0.263	0.983	0.886	0.500	0.096
Behavior Management Strategy	0.773	0.833	0.778	0.444	0.726	0.066
Contextualization	0.670	0.241	0.728	0.190	0.143	0.624
Interdisciplinary Approach	0.166	0.082	0.596	0.800	0.383	0.949
Direct Instruction	0.258	0.121	0.666	0.963	0.298	0.940
Flipped Classrooms	0.187	0.418	0.575	0.580	0.036	0.517
Kinesthetic Learning	0.741	0.032	0.522	0.972	0.513	0.645
Expeditionary Learning	0.417	0.225	0.961	0.981	0.612	0.336
Personalized Learning	0.884	0.034	0.189	0.531	0.523	0.746
Game-Based Learning	0.824	0.613	0.364	0.603	0.614	0.684

The respondents' socio-demographic profile was considered in establishing relationships with their pedagogical strategies used in an online learning. In terms of age, it is found that **significant relationship exists** between the two (2) pedagogical strategies: These were the graphic organizer that gathered a 0.004 result and self-questioning that collected a 0.000 result. The results implied that age group influence the utilization of pedagogical strategies such as graphic organizer ad self-questioning. In terms sex, it is found that there's a **significant relationship** between the two (2) pedagogical strategies: These were the graphic organizer that gathered a 0.008 result and self-questioning that collected a 0.008 result. The results implied that sex influence the utilization of pedagogical strategies such as graphic organizer ad self-questioning.

Students of all ages can use graphic organizers to organize, clarify, or simplify difficult information. They can also be used to assist students create understanding by exploring the relationships between concepts. Teacher-created organizers can help students study more effectively. They give pupils a way to organize large volumes of data, introduce a more nuanced lens for analyzing a complicated text, and allow them to detect trends and compare views. Graphic organizers, on the other hand, may have the unintended result of restricting students' thinking to just filling in the boxes, allowing them to avoid the messy but necessary process of exposing critical ideas or conceptual knowledge. Graphic organizers, when carefully designed, created, and used, can serve as vital intellectual guardrails, guiding students toward deeper comprehension and learning (Wise & Cooper, 2019). Self-Questioning strategies are effective ways of promoting self-directed learners. Research on self-questioning shows that questions created by the student are much more effective than questions given to the student by someone else. The more students practice generating and using self-questions in diverse situations, the more likely they are to develop the habit of self-questioning so that it becomes a skill that is used automatically and unconsciously as the situation requires. (Hartman, 2001). In terms of length of teaching service, there one (1) pedagogical strategies found a **significant relationship**, this is the cooperative learning that calculated a value of 0.002. The results implied that the length of teaching service influence the utilization of pedagogical strategies such as the cooperative learning. Peers learn to depend on each other in a positive way for a variety of learning tasks (Colorin Colorado, 2019). Cooperative learning transforms the roles of students and teachers in the classroom. Teaching and learning are no longer solely the responsibility of the teacher, but rather are shared by groups of students. Structured discussion and reflection on group process can help students learn how to work together successfully, and structured discussion and reflection on group process can help students avoid some issues (Teacher Vision, 2020). In terms of civil status, monthly salary, highest educational attainment and the academic rank of the respondents, it is found that **significant relationship does not exist** among the assessed pedagogical strategies. In terms of these variable it can be gleaned that these have no influence to the utilization of the indicated pedagogical strategies

Conclusions

1. It is noted from the results that majority of the respondents have ages ranging from 21 to 30 years old that belong to age group classification of adult. Female respondents have a larger number than the male which shows 3.4% of difference. In term of the civil status, the respondents are mostly single. The public secondary school teachers employed in the City school division of Cabanatuan City are most of them are new in their teaching career that has a teaching experience less than 5 years. In terms of the academic position, there are greater number of teacher 1
2. All pedagogical strategies indicated are always employed by the primary teachers employed in the private schools in the division of Cabanatuan City during online learning. Flipped classroom approach, Children Teaching Children/Cooperative Learning, game-based learning, Reflective Questions are the top most employed pedagogical strategies as assessed by the respondents.

3. In terms of age and sex, there is a significant relationship between the two (2) pedagogical strategies: These were the graphic organizer and self-questioning. In terms of length of teaching service, there one (1) pedagogical strategies found a significant relationship which is the cooperative learning. In terms of handled grade level, it is found that significant relationship exists between the two (2) pedagogical strategies: These were the Problem Solving and Research Activities and Mnemonics. In terms of civil status, monthly salary, highest educational attainment and the academic rank of the respondents, it is found that significant relationship does not exist among the assessed pedagogical strategies.

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