**International Journal of Scientific Research and Management (IJSRM)**
**||Volume||10||Issue||03||Pages||EC-2022-755-762||2022||**
**Website: www.ijsrm.in ISSN (e): 2321-3418**
**DOI: 10.18535/ijsrm/v10i3.ec02**

# Factors Affecting Teachers' Technological Methodologies, Practices and Teaching Performance: A Descriptive Analysis

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**Abstract**
The purpose of this study is to identify and describe the factors affecting teachers' technological methodologies, practices, and teaching performance in Senior High Schools this school year 2020-2021. The study employs a checklist to determine the quantitative outcome of the given data. The findings revealed that factors affecting technological methodologies in terms of resources, teachers' experience with ICT, and teaching strategies were highly affected and at a high level for digital resources, online classes, and ICT integrations. On the other hand, the results for internet connection and ICT integration were moderately affected and at a moderate level, respectively. Hence, in summary during this time of pandemic technological methodologies had played a vital role in channeling the teaching-learning process to both teachers and learners in the different phase of life situations.

**Keyword:** Technological methodologies and Practices of Teachers

## Introduction

The Philippines is one of the Asian countries that is seeing a major transition in its educational system as it strives for bigger things. Today's education is vastly different from that of fifteen or twenty years ago. People nowadays must do a new duty in order to foster a culture of learning and great education. The k to 12 Basic Curriculum Education is our educators' ambition for our Filipino learners to be more technologically educated, skilled, and internationally competitive.

Inside the classroom, teachers are the driving force in the teaching-learning process. Technology instructions may relate to instructors' technical knowledge on how to employ technology to assist teaching and learning in the classroom or even online classes. In terms of teaching performance, the relevant practices of ICT integration are regarded as one of the finest strategies to technological innovation by instructors.

On December 3, 2019, the Department of Education launched a special program called 'Sulong EduKalidad' as a rallying cry for its reforms to achieve basic education quality. Briones explained that Sulong EduKalidad will have four key reform areas with this program: (1) K to 12 Curriculum review and update; (2) Improvement of learning environment; (3) Teachers' upskilling and reskilling; and (4) Engagement of stakeholders for support and collaboration.

As a result, in order to carry out this mandate, the Department of Education, specifically the Senior High Schools in the Zamboanga City Division, implements the DepEd Order on the Integration of Technology in the Classroom. Technology integration is evident in all teachers across grade levels, according to the teachers. It is a matter of utilizing various methods of technological methodologies instruction, as well as practices for effective classroom instruction delivery.

In relation with the implementation of teachers' technological methodologies and practices in our teaching-learning process, the objective of the Sulong Edukalidad particularly in the program of teaccher's upskilling and reskilling is hereby in consonant to this study.

Education is one of the powerful agencies that need to be supported in some developing countries, such as the Philippines, where governments are purchasing computers, laptops, netbooks, tablets, and so on for many or all of the children within their territories, having bought into the notion that their country's youth require technological skills and a modernized educational experience if their country is to compete in the global knowledge and information economy. Unfortunately, teachers in some points are rarely taken into account in this scenario; training is frequently not included in the government's budget plans for technology implementations, and teachers are not consulted or considered. If however, there are trainings numbers of participation of teachers were very limited too.

**Statement of the Problem**

This study aimed to determine and describe the factors affecting teachers' technological methodologies, practices and teaching performance of Senior High School Teachers at Baliwasan Senior High School.

It sought to answer the following problems:

1. What are the teachers technological methodologies during the school year 2021-2022?
2. What are the factors affecting technological methodologies among teachers in terms of?
    a. Materials/Resources
    b. Internet Connectivity
    c. Teacher's Experiences on ICT
    d. Teacher's Teaching Strategies
3. What is the level of technological practices of teachers in terms of?
    a. Digital resources
    b. Online Class
    c. Online Assessment
    d. ICT Integration in Teaching

4. What is the level of teachers' teaching performance?

**Scope of the Study**

This study focused on the factors affecting teachers' technological methodologies, practices and teaching performance of teacher in Zamboanga City. The respondents of the study were the senior high school teachers of Baliwasan Senior High School- Stand-Alone at Baliwasan District of Zamboanga City School Division.

**Research Design**

This study employed the descriptive-quantitative method of research. This research design was deemed appropriate because it will determine the technological methodologies instructions and its effectiveness in teaching performance of teachers. The goal was the acquisition of factual, accurate and systematic data that can be used in averages, frequencies and similar statistical calculations.

It was quantitative research because this study dealed with quantitative data. Quantitative research was an inquiry into a social or human problem based on testing a theory composed of variables, measured with numbers, and analyzed with statistical procedures, in order to determine whether the predictive generalizations of the theory hold true (Creswell cited in Hector, 2008).

**Population sampling Design**

The study utilized the random sampling design in determining the respondents. The researcher utilized the Slovin's formula with the 5% marginal error that will used to figure out what sample size was needed to take for a survey of the study. Hence, there were only 55 teacher-respondents in this study.

**Research Instrument**

The self-created questionnaire survey was divided into four sections. It utilized the Likert scales with the following numbers of descriptions such as 4- Highly affect, and High Level, 3- Moderately Affect and Moderate Level, 2- Fairly Affect and fair Level and 1- Poor Affect and Poor Level respectively.

**Ethical Considerations**

In any research study, the ethical standard procedure must be followed. The researcher adheres to the standard protocol to ensure that the research study was guided by guidelines and standard ethical procedures. As a result, the researcher sought appropriate consent and permission from the respondents in order to allow and ensure the protection and confidentiality of their data in the study. As a result, it was treated with high regard, and their responses will be kept strictly confidential. The researchers sought approval of the respondents to allow the researchers to present in the other forum or fora.

**Data Gathering Procedures**

Following the approval of the research proposal, data collection will begin. The researcher sought permission from the Superintendent of the Schools Division to collect data at Baliwasan Senior High School in Zamboanga City. After it has been approved, she presented the letter to the School Principal and teachers in order to request the teachers' performance, which was the Individual Performance Commitment Review Form (IPCRF) rating of SY 2020-2021, and to administered a survey questionnaire to the teachers who have been identified as study respondents. The researcher will then total the data using Microsoft Excel and submitted the tabulated data to the statistician for statistical analysis and discussion by providing data analysis and interpretation.

**Data Analysis**

**Problem 1**. What are the teachers technological methodologies during the school year 2021-2022?

Table 1.1: **Teachers Technological Methodologies During The School Year 2021-2022**

| *Techonology Methodologies* | *Frequency* | *Percentage* |
|---|---|---|
| *Keypad Phone* | *10* | *6%* |
| *Android Cellular Phone* | *51* | *29%* |
| *Tablet* | *15* | *9%* |
| *Laptop* | *54* | *31%* |
| *Printer* | *7* | *4%* |
| *Desktop with Monitor* | *36* | *21%* |
| *Others( Specify)TV* | *0* | *0%* |
| *Total* | *173* | *100%* |

Table 1.1 displayed the results of teachers' responses to teachers' technological methodologies during the school year 2021-2022. The table shown the various technologies that they used, such that, out of 173, the following frequencies and percentages were presented: for keypad, 10 teachers out of 55 total respondents with a percentage of 6%, android cellular phone was 51 with a percentage of 29 percent, tablet was 15 with a percentage of 9 percent, printer with 7 as well as desktop with monitor had a frequency of 36 with a percentage of 21 percent, and laptop was with the highest frequency, with 54 using them.

**Problem 2**. Factors affecting technological methodologies among teachers in terms of materials/resources, Internet Connectivity, Teacher's Experiences on ICT, Teacher's Teaching Strategies

Table 2.1: **Factors Affecting Technological Methodologies on Materials/Resources**

| *Materials/ Resources* | *Mean* | *Description* |
|---|---|---|
| *1.CapSLET are available* | *3.90* | *Highly Affected* |
| *2.Regionally developed SLMs are available* | *3.53* | *Highly Affected* |
| *3.Centrally develop SLMs are avaialble* | *3.00* | *Moderately Affected* |
| *4.SLMs are accessible in the DepEd Portal* | *3.38* | *Highly Affected* |
| *5. Interactive materials are readily available* | *3.11* | *Moderately Affected* |
| *Over all Mean* | *3.384* | *Highly Affected* |

Legend: 3.26-4.00- Highly Affect 1.76- 2.5 – fairly Affect

2.51-3.25- Moderately Affect 1.0-1.75- Poorly affect

Table 2.1 displayed the effects of factors affecting technological Methodologies on materials and resources. The results shown that capslets were available have the highest mean of 3.90, which describes as highly affective, followed by regional developed SLMs with a mean of 3.53 and SLMs were accessible in the DepEd Portal with a mean of 3.38, respectively. It only demonstrated that these three materials and resources were the most severely impacted factors affecting Technological methodologies because, during the pandemic, these were the only available resources used in our division. While centrally developed SLM and interactive material were widely available, they have a mean of 3.00 and 3.11 with the description of moderately affected. However, despite of this, the overall mean of this factor falls under the highly affected. Hence, the results may show that without these resources, the teaching and learning process of the students, particularly those students who were unable to access the school's online portal due to a lack of available gadgets, would be hampered, especially during this time of pandemic, and yet as a teacher, this factor would have a significant impact on the delivery of lessons to the students.

Table 2.2: **Factors Affecting Technological Methodologies on Internet Connectivity**

| *Internet Connectivity*<br>*The schools with….* | *Mean* | *Description* |
|---|---|---|
| *1. internet access* | *3.13* | *Moderately Affected* |
| *2.internet data* | *2.93* | *Moderately Affected* |
| *3.free wifi* | *2.87* | *Moderately Affected* |
| *4.electricity* | *3.64* | *Highly Affected* |
| *5.strong signal* | *2.80* | *Moderately Affected* |
| *Over-all Mean* | *3.074* | *Moderately Affected* |

Table 2.2 shown the result of factors affecting technological methodologies on internet connectivity. The result revealed that electricity was the highly affected factors with the mean of 3.64. Hence, in reality without electricity both the teachers and students can't access on internet. Though the other may falls under the moderately affected with the over-all mean of 3.074 as moderately affected, such that all these factors were just interrelated with each other.

Table 2.3: **Factors Affecting Technological Methodologies on Teachers Experiences on ICT**

| *Teachers Experiences on ICT*<br>*The teacher....* | *Mean* | *Description* |
|---|---|---|
| *1.ICT literates* | *3.49* | *Highly Affected* |
| *2.Provides with ICT training* | *3.16* | *Moderately Affected* |
| *3.Enhances ICT literacy* | *3.16* | *Moderately Affected* |
| *4.Utilizes ICT in teaching-learning* | *3.51* | *Highly Affected* |
| *5.Opens to learn new technologies* | *3.65* | *Highly Affected* |
| *Over-all Mean* | *3.394* | *Highly Affected* |

In table 2.3 shown the result of factors affecting technological methodologies on teachers experience on ICT. Noticed that open to learn new technologies got the highest mean of 3.65 as highly affected. The result can not be denied the fact that teachers still looking for more knowledge to learn on new technologies that can offer be of great helped wether this could be used as pedagogical in nature or not.Other factors that falls into highly affect were the ICT literate, and utilizes ICT in teaching-leaning. Over-all this factor carries the mean of 3. 394 which desribes as highly affected. Hence, generally experience of teachers on ICT had a great impact in consonant with the technological methods of instructions and strategies in the delivery mode of teaching ang learnings.

Table 2.4: **Factors Affecting Technological Methodologies on Teachers Teaching Strategies**

| *A. Teachers Teaching Strategies*<br>*The teacher employs….* | *Mean* | *Description* |
|---|---|---|
| *1.Inquiry based teaching* | *3.62* | *Highly Affected* |
| *2.Differentiated instructions* | *3.53* | *Highly Affected* |
| *3.ICT Integration* | *3.62* | *Highly Affected* |
| *4.Explitcit teaching* | *3.45* | *Highly Affected* |
| *5.Cooperative learning* | *3.55* | *Highly affected* |
| *Over-all Mean* | *3.394* | *Highly Affected* |

Table 2.4 shown the result of factors affecting methodologies on teachers teaching strategies. The table had shown that all the above mention factors under teachers teaching strategies were describe as highly affected such Inquiry based teaching and ICT integration with 3.62 as the highest mean among them, followed by cooperative learning with 3.55, differentiated instruction with the mean of 3.53 and explicit teaching with the mean of 3.45. the over-all mean of this factor was at 3.394 which desribed as highly affected. Result simply says that teachers were employing these different strategies in their teaching in using the technologies.

According to Aina (2013), instructional materials were very important because what students heard easily forgotten, but what they saw can not easily forgotten and lasts longer in their memory more so on the part of the researcher if allowing studnets to be engaged in the application of teaching- learning process. BAWA(2016) on the other hand, emphasized that instructional materials can be anything from the simplest to the most complicated material that was used as instructional materials as long as it was beneficial to the learning process.

**Problem 3**. What is the level of technological practices of teachers in terms of a. Digital resources , online class, online assessment, ICT integration in teaching?

Table 3.1: **Level of Technological Practices of Teachers on Digital Resources**

| *Digital Resources*<br>*the teachers uses……* | *Mean* | *Description* |
|---|---|---|
| *1. online materials* | *3.44* | *High Level* |
| *2. utilize e-books* | *3.07* | *High level* |
| *3. DepEd portal* | *3.00* | *High Level* |
| *4. Interactive materials* | *3.24* | *High level* |
| *5.Online articles* | *3.25* | *High Level* |
| *Over-All Mean* | *3.2* | *HighLevel* |

Legend: 3.26-4.00- High Level 1.76- 2.5 – Fair Level
2.51-3.25- Moderate Level 1.0-1.75- Poor level

Table 3.1 displayed the results of teachers' technological practices with digital resources. The overall mean of 3.2 indicates that teachers used these different digital resources in their teaching as part of their technological practices. Teachers were open-minded to online resources as mentioned because these could provide other additional vital educational information to the learners.

Table 3.2: **Level of Technological Practices of Teachers on Online Class**

| *Online Class*<br>*The teacher uses…..* | *Mean* | *Description* |
|---|---|---|
| *1. google classroom* | *3.40* | *High Level* |
| *2. Zoom meeting* | *3.56* | *High Level* |
| *3. Microsft teams* | *2.96* | *Moderate Level* |
| *4. FB chat room* | *3.56* | *High Level* |
| *5. FB messenger* | *3.63* | *High level* |
| *Over-all Mean* | *3.422* | *HighLevel* |

Table 3.2 displayed the level of Technological Practices of Teachers in an Online Class. The overall result of 3.422 as high level that these google class, zoom meeting, FB chat room, and FB messenger were the most at used by teachers during this time of pandemic aside from they were friendly apps,these technologies were easy to accessed. Whereas, Microsoft Teams has a mean of 2.96 as moderate level, such result revealed that teachers do not commonly used this application because students do not have the accessed too.

Table 3.3: **Level of Technological Practices of Teachers on Online Assessment**

| *Online Assessment*<br>*The teacher uses….* | *Mean* | *Description* |
|---|---|---|
| *1.CANVA website* | *2.73* | *Moderate Level* |
| *2. Google classroom* | *3.31* | *High Level* |
| *3. Kahoot* | *2.44* | *Modearte Level* |
| *4. slido* | *2.22* | *Moderate Level* |
| *5. menimeter* | *2.26* | *Moderate Level* |
| *Over-all Mean* | *2.592* | *Moderate Level* |

Table 3.3 shown the result for Level of Technological practices of Teachers on Online assessment. The result revealed that Google classsroom has the highest mean of 3.31 describe as High level among the other four (4) enumerated online assessment used and practiced by teachers. Google classroom was easy to prepare, on the part of the teachers in which this apps could immediately provide the teachers needed data for interpretation.

Table 3.4: **Level of Technological Practices of Teachers on ICT Integration in Teaching**

| *A. ICT Integration in Teaching*<br>*The teacher uses….* | *Mean* | *Description* |
|---|---|---|
| *1.powerpoint presentation* | *3.71* | *High Level* |
| *2.micsoft excel* | *3.84* | *High Level* |
| *3.video lesson* | *3.94* | *High Level* |
| *4.educational application games* | *3.16* | *HighLevel* |
| *5.google form for assessment* | *3.54* | *High Level* |
| *Over-all Mean* | *3.64* | *High Level* |

Table 3.4 shown the result of Technological Practices on ICT integration in teaching. The results shown that teachers used power point presentaion, mocrosoft excel, video lessons, educational application games, google form for assessment with the mean of 3.71. 3.84, 3.94, 3.16 and 3. 54 with the weighted mean of 3.64 with the description of High Level respectively. This furtherly revealed that technology was being integrated in teaching wether it could used as part of their teaching strategies or not. Bottomline was teachers were privileged to have a ready access on these technological practices in their teaching.

Further study can be aided in updating teaching techniques to better support inclusionary education as well as enhancing student motivation. Hence, to the researcher technology integration in the class had becoming the major philosophy as to the human motivators and human performance technology

**Problem 4**. What is the level of teachers' teaching performance?

TABLE 4.1: **Level of Teachers' Teaching Performance**

| *Level of Teachers' Teaching Performance* | | | |
|---|---|---|---|
| *IPCRF* | *N* | *Mean* | *Adjectival Rating* |
| *Sy 2021-2022* | *55* | *4.44* | *Very Satisfactory* |

Range: 4.500-5.000-Outstanding 1.500-2.499- Unsatisfactory
3.500-4.499-Very Satisfactory Below 1.499- Poor
2.500-3.499- Satisfactory

The results of teachers' Individual Performance Commitment and Review Form (IPCRF) for the school year 2020-2021 was shown in Table 4.1. The mean of the teachers during the school year 2020-2021 was 4.44, with the adjectival rating of Very Satisfactory, according to the findings. As a result, the teachers' performance rating in relation to technological methodologies and practices revealed that, despite the pandemic situations in our country, teachers did their best in their teaching and learning process to their students throughout the year. Teachers' teaching methods can be influenced by technology, but other factors that can impede teaching and learning can bridge the gap because teachers' strategies and commitments vary.

## Conclusion

**Based on the findings, the following conclusions were drawn:**

1. 54 percent of the 55 respondents used a laptop, 51 percent used an Android cell phone, 36 percent used a desktop and monitor, 15 percent used a tablet, 10 percent used a keypad phone, 7 percent used a printer, and none of the 55 respondents said they used other technological methods such as TV. The total frequency of the identified technological methodologies was 173. The researcher concluded that teachers' performance exhibits an excellent access in terms of their gadgets believing that technologies were one of the medium for excellent performance and outcomes of teaching- learning especially on online classes.
2. Based on factors influencing technological methodologies such as materials/resources, internet connectivity, teachers' experiences in ICT, and teachers' teaching strategies, the researchers would like to conclude that this factor had a significant impact on teaching performance if they were placed emphasis on establishing an internet connectivity that was secured, powerful, or with higher fibers to serve its purpose, especially during this time of pandemic where classes were cancelled.
3. On the Level of Teachers' Technological Practices, three of which gathered a weighted between 3.00-3.99 that has a description of High level were as follows: teacher use digital resources, online class, and with ICT integration. As a result, the weighted mean of the online assessment was 2.592, with the description of Moderate High. The researcher would like to conclude that this online practices it would be a normal practices under normal conditions such as we have today, it was much better that teachers be given training and workshops on how to develop skills in such low factors.
4. The mean score on the Individual Performance Commitment and Review Form (IPCRF) for teachers for the school year 2020-2021 is 4.44, with an adjectival rating of Very Satisfactory. The researcher hopes to reach the conclusion that teachers' performance can still be improved and that they should be recognized as Outstanding for the upcoming school year 2021-2022.

## Recommendations

Based on the findings the following recommendations were made:

### Department of Education Officials

Schools Division Superintendent, Supervisors, and other DepEd personnel, that this study may provide data and information that can be used to improve the educational system by focusing on the factors affecting teachers' technological methodologies, practices, and teaching performance.

### School Heads

That this study may served as a foundation for providing the necessary successful developmental programs for the improvement and effective performance of teachers in accordance with the factors affecting teachers' technological methodologies, practices, and teaching performance through the integration of technology by teachers as the driving force in the teaching-learning process of the learners.

### Teachers

That this study can be used to motivate teachers to pursue professional development by identifying the factors affecting teachers' technological methodologies, practices, and teaching performance.

**Researchers**

This research would also be useful to future researchers who planed to conduct studies related to the current investigation. This would contribute to the enrichment of their literature and understanding of their studies.

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