High School Teachers' Technological Difficulties: Basis for an Intervention Plan

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Abstract

This study aimed to determine the level of technological difficulties encountered by public high school teachers during the pandemic in a secondary school in Murcia, Negros Occidental. Technological difficulties in the areas of Microsoft Office programs, multimedia platforms, and e-learning resources were ascertained. Further, the researchers determined significant differences between the levels of technological difficulties when these teachers were grouped according to sex, age, civil status, average family monthly income, and highest educational attainment. A self-made questionnaire was used to establish the difficulties of the teachers. It contained 45 items evenly distributed in the three areas, garnered a very high validity, and noted a Cronbach's alpha reliability index interpreted as excellent. The means revealed that the level of teachers' technological difficulty in the area of Microsoft office programs was "low," while "moderate" for the areas of multimedia platforms and e-learning resources. Moreover, Mann-Whitney U tests revealed that significant difference is only evident in the area of e-learning resources when teachers are grouped according to age. Based on the study's results, a proposed intervention plan was formulated to lessen these teachers' technological difficulties and further their learning in technology.

Keywords: Technological difficulty, Microsoft Office programs, multi-media platforms, e-learning resources, Negros Occidental.

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Introduction

Nature of the Problem

The COVID-19 pandemic brought changes and disruptions in the history of education, affecting almost 1.6 billion learners in more than 190 countries (United Nations, 2022). The world continues to struggle with the virus; however, technological privileges keep nations more resilient because they better cope with the challenges, especially in their governance, health, and educational sectors (Jiang & Ryan, 2020).

In a report published by RAND Company, unequal internet connection has been educators' biggest concern as it hurts students' ability to learn in a virtual education setting (Klein, 2020). Thailand encountered the same situation where universities were not ready for online learning. In contrast, teachers need to acquire and learn how to utilize the different e-learning tools independently (Sumabut & Tuamsuk, 2021).

Current State of Knowledge

Specific to the Philippine setting, the country also acknowledges the importance of technology in education that it pursues paradigm-shifting from the book age to the computer age. As added, the era of digitalization and technology is the key to "education during the trying times" (Enicola, 2021).

However, remote Philippine schools still experience a scarcity of technological resources, giving them extreme challenges in pursuing quality education (Orale & Quejada, 2018). As Figueroa, et al. (2016) asserted, far-flung schools, like those in Samar, have always been deprived of much-needed resources like technology, making them far behind in learning 21st-century key skills. On the other hand, Nick Hutton, regional director of global software company D2L, said that a successful teaching-learning process in a remote situation also means optimizing faculty technological skills. Teachers should also be prepared to be technologically equipped (Lacsamana, 2021).

Objectives

The Electronic Self-Assessment Tool (eSAT) results that were conducted in 2020 showed that the priority development for the Philippine Professional Standards for Teachers (PPST) Indicator 1.3.2 or the "Ensured positive use of ICT to facilitate teaching-learning process" got an alarmingly low score. Hence, this study sought the technological difficulties encountered by school teachers in times of educational crisis in a selected public secondary high school in **Murcia, Division of Negros Occidental,** during the School Year 2021-2022. The study's results will also be used to formulate an intervention plan to help upskill teachers and supplement whatever lapses were determined.

Specifically, the study sought answers to the following questions: 1) What is the profile of respondents in terms of age, sex, civil status, education, and family income? 2) What is the level of technological difficulties encountered by high school teachers in terms of Microsoft Office application, multimedia platforms, and e-Learning Resources? 3) Is there a significant difference in the level of technological difficulties encountered by high school teachers when grouped and compared according to the variables mentioned above? 4) Based on the study's results, what intervention plan can be formulated?

Methodology

Research Design

This study utilized a descriptive research design. This aims to accurately and systematically describe a population, situation, or phenomenon and can use various research methods to investigate one or more

variables (McCombes, 2019). Specifically, this design explores a population's characteristics; identifies problems within a unit, an organization, or a population; or looks into variations in characteristics or practice between groups (Siedlecki, 2019).

As applied in this study, the descriptive-comparative design determined the difficulties of public high school teachers regarding Microsoft programs, multimedia platforms, and e-learning resources when they were grouped according to the different variables. These difficulties were identified, analyzed, interpreted, and similarities and differences were explained in the levels of technological difficulties across the other groups of respondents.

Research Environment

The study was conducted in a national high school in the Municipality of Murcia, District of Murcia II, Division of Negros Occidental. The school is situated on 12-hectare farmland at Barangay Lopez Jaena, 15 minutes from the municipality proper and 30 to 45 minutes from Bacolod City. It caters to 4,000 learners from junior high school to senior high school. In addition, the school serves as a catchment for students coming from mountainous areas of Don Salvador Benedicto, Minoyan, Pandanon, and Canlandog, respectively. It houses 101 teaching personnel and 14 non-teaching personnel. This secondary school offers special programs like STE, SPA, and SPS. Recently, the school was awarded a three (3) star school in School-Based Management-Wash in Schools (SBM-Wins) and represented the Division of Negros Occidental in the regional competition. Lastly, the school is also categorized as level three or in the advanced level of practice for School-Based Management (SBM).

Subject-Respondents

The respondents of this study were 88 secondary school teachers out of 113 in one national high school in the municipality of Murcia, Negros Occidental, during the school year 2021-2022. To ensure that all eight departments in the school had a proportional number of samples, the researchers employed a stratified random sampling technique. Thomas (2020) stated that in stratified random sampling, researchers should divide a population into homogeneous subpopulations called strata, and each stratum is then sampled. Table 1 presents the distribution of respondents by department.

Table 1
Distribution of Respondents

Departments	Population	Sample	Percentage
A	17	13	15
B	17	13	15
C	16	13	14.2
D	13	10	11.5
E	12	9	10.6
F	16	13	14.2
G	15	12	13.3
H	7	5	6.2
Total	**113**	**88**	**100.0**

Data Collection

The researchers had written a letter to the division superintendent to ask permission to gather data from the public school teachers. Upon approval, the researchers then wrote a letter of intent to the selected public secondary school principal and appropriately coordinated with the department coordinators to share the researchers' insights and obtained the sample size using Cochran's formula and stratified random sampling.

Before administering the research instrument, an orientation was provided to the respondents on the purpose and scope of the study. The orientation was also done to signify their willingness to participate in the said research. The researchers ensured that all the health protocols for the actual data gathering were observed. They answered a two-part self-made questionnaire.

The research instrument has been validated using the criteria Good and Scates set (Oducado, 2020). Three expert validators rated it and acquired an average of 4.87, interpreted as excellent. Cronbach's alpha (Glen, 2022) was utilized to identify the internal consistency. The questionnaire has garnered a value of 0.979, interpreted as excellent, which is far greater than the minimum alpha value of 0.70 for the questionnaire to be reliable and consistent enough to be used for the actual data gathering by the researchers. Finally, the data gathered were tabulated, analyzed, and interpreted using the appropriate statistical tools.

Data Analysis and Statistical Treatment

The respondents answered a four-part researchers-made questionnaire, which underwent validity and reliability testing before its administration. The descriptive and comparative analytical schemes were employed to reveal the dynamics involved in the processes. Frequency count, percentage, mean, and Mann-Whitney U tests were used to treat the descriptive and inferential data.

To analyze the data and address the different objectives, the researchers have employed descriptive and comparative analytical schemes and adhered to the following statistical tools: frequency count and percentage to determine the profile of respondents, mean to establish the level of technological difficulties in terms of Microsoft programs, multimedia platforms, and e-learning resources, and Mann Whitney U test to find out significant differences when respondents are grouped according to the variables as mentioned above. For the levels of technological difficulties, mean scores were interpreted as follows:

Mean Score Range	Verbal Interpretation
4.50-5.00	Very High Level
3.50-4.49	High Level
2.50-3.49	Moderate Level
1.50-2.49	Low Level
1.00-1.49	Very Low Level

Results and Discussion

Respondents' Profile

Table 2 shows the demographic profile of the respondents when grouped according to age, sex, civil status, highest educational attainment, and average family monthly income. When grouped according to age, the results show that 55.70% are younger, whose ages are below 35 years old, while 44.30% are older, aged 35 years old and above. When grouped according to the variable sex, it was found that 35 of the respondents were male, while there were 53 of them were female. When grouped according to civil status, 37.50% are single, while 62.50% are married. When grouped according to highest

educational attainment, there were 62 who had lower educational attainment, while 26 had higher educational attainment. Finally, when grouped according to average family monthly income, 64.80% have lower income, while 35.20% have higher income.

Table 2

Profile of the Respondents

Variables	Categories	Frequency	Percentage
Age	Younger (below 35 years old)	49	55.7
	Older (35 years old and above)	39	44.3
Sex	Male	35	39.8
	Female	53	60.2
Civil Status	Single	33	37.5
	Married	55	62.5
Highest Educational Attainment	Lower (Bachelor's Degree)	62	70.5
	Higher (Masters and Doctorate Degrees)	26	29.5
Average Family Monthly Income	Lower (below P28,000)	57	64.8
	Higher (P28,000 and above)	31	35.2
	Total	**88**	**100**

Teachers' Level of Technological Difficulties in the Area of Microsoft Programs

Table 3 shows the level of technological difficulties encountered by teachers according to the area of Microsoft Office applications. Results show that the respondents have a "low" technological difficulty level of the respondents on Microsoft Office applications (M=2.44). The item that obtained the highest mean score was "entering data on my created spreadsheet in Microsoft Excel" (M=2.63), while the item that scored the lowest was "setting the size and orientation of my slides in MS PowerPoint" and "inserting tables, shapes, and images in MS Word" (M=2.26).

The high difficulty mean score on the utilization of Microsoft Excel is supported by the idea that a big portion of the population, though not the majority, already belongs to an older group. Hence, many may struggle with transferring data from papers into their computers due to difficulties with eyesight. On the other hand, using MS PowerPoint and Word functions, obtaining low mean scores implies that the teachers have already been used to manipulating the functions of MS PowerPoint and Word since they always deal with them in making their reports, lesson plans, and visual aids.

These results support the study of Sajid et al. (2018), asserting that teachers were competent in using Microsoft programs, especially the word document; thus, their difficulty in manipulating such programs is

low. However, this debunks the findings of Ogwu (2016), asserting that teachers poorly utilize Microsoft packages for teaching and learning, resulting in them becoming less competent in such Microsoft programs.

Table 3

Teachers' Level of Technological Difficulties based on Microsoft Office Application

Items	Mean	Interpretation
As a teacher, I have difficulties in...		
1. creating text documents in Microsoft Word.	2.38	Low Level
2. inserting tables, shapes, and images in Microsoft Word.	2.26	Low Level
3. changing the page layout (like margins, orientation, columns, indentation, and spacing) of my text document in Microsoft Word.	2.47	Low Level
4. adding a citation, footnote, table of contents, caption, and bibliography for my references in Microsoft Word.	2.49	Low Level
5. navigating the review tab to check for the spelling, language, translation, and word count of my text document in Microsoft Word.	2.52	Moderate Level
6. creating workbooks or spreadsheets in Microsoft Excel.	2.48	Low Level
7. entering data in my created Spreadsheet in Microsoft Excel.	2.63	Moderate Level
8. formatting cells like text wrapping, merging cells, adding decimal places, and changing currency in Microsoft Excel.	2.5	Moderate Level
9. performing mathematical, statistical, and logical operations in the Microsoft Office Excel program.	2.61	Moderate Level
10. creating graphs using excel to better present the totality of data.	2.45	Low Level
11. creating and opening existing presentations in Microsoft PowerPoint.	2.42	Low Level
12. setting the size and orientation of my slides in Microsoft PowerPoint.	2.26	Low Level
13. adding shapes, images, sounds, and videos to my presentation in Microsoft PowerPoint.	2.35	Low Level
14. adding custom effects, transitions, and animations to my presentation in Microsoft PowerPoint.	2.36	Low Level
15. presenting and navigating my presentation in Microsoft PowerPoint.	2.38	Low Level
Overall Mean	**2.44**	**Low Level**

Teachers' Level of Technological Difficulties in Multi-media Platforms

Table 4 shows the level of technological difficulties that secondary public school teachers encounter in the new normal of multimedia platforms. Results show that they have a "moderate" level of technological difficulties in the area as mentioned above (M= 2.52). The item with the highest mean score is "connecting to the internet due to connectivity issues" (M=2.88) because the school where the respondents teach is located in a rural area with insufficient cell sites making connectivity a problem. Also,

many teachers reside in remote areas and lack load allowances, making internet connection a luxury for them.

On the other hand, "setting the printer's resolution and quality from high to draft for faster printing" got the least mean score (M=2.22). This is because teachers are already so used to using their printers since they have printed hundreds of modules almost every week since distance learning education took place.

The results confirm Konig et al. (2020) findings that teachers face significant challenges in adapting to distant teaching-learning and maintaining at least a minimum amount of communication with their students.

Table 4

Teachers' Level of Technological Difficulties According to Multi-Media Platforms

Items	Mean	Interpretation
As a teacher, I have difficulties in...		
1. adding or inviting students to join my class in Google Classroom, Microsoft Teams, Zoom, etc.	2.6	Moderate Level
2. holding virtual classes on Facebook, Google Meet, Microsoft Teams, and/or Zoom.	2.32	Low Level
3. creating or modifying assignments in Google Classroom, Microsoft Teams, and/or Schoology.	2.38	Low Level
4. creating online forms and assessments that my students and colleagues can utilize.	2.56	Moderate Level
5. Set a virtual meeting and disseminate the link so students/colleagues can join.	2.56	Moderate Level
6. creating a resource page for learning materials and instructions for the whole class in Google Classroom, Microsoft Teams, and/or Schoology.	2.58	Moderate Level
7. screen sharing for my presentation during virtual classes on Facebook, Google Meet, Microsoft Teams, and/or Zoom.	2.27	Low Level
8. printing learning activity sheets and modules from .pdf, and/or .docx file format.	2.36	Low Level
9. printing learning activity sheets and modules in different page handling (booklet, multiple, poster).	2.56	Moderate Level
10. setting the printer's resolution and/or quality from high to draft for faster printing.	2.22	Low Level
11. troubleshooting my printer.	2.67	Moderate Level
12. transferring files and digital-print modules through USB, Share-it, and/or Google drive.	2.39	Low Level
13. connecting to the internet due to connectivity issues.	2.88	Moderate Level
14. performing my teaching duties since I don't have my own laptop and/or computer.	2.67	Moderate Level
15. printing my modules and/or learner's answer sheets since I don't have my own printer.	2.82	Moderate Level
Overall Mean	**2.52**	**Moderate Level**

Teachers' Level of Technological Difficulties in E-learning Resources

Table 5 shows the level of technological difficulties teachers encounter according to the area of E-learning resources. Respondents have a "moderate" technological difficulty level in the area as mentioned above (M=2.81). The results show that respondents have the lowest mean on "downloading educational videos from YouTube" (M=2.57). In contrast, the highest mean score is "utilizing search engines because of the poor navigation set-up; thus, not user-friendly" (M=2.95).

This implies that teachers don't get the chance to fully maximize the use of online resources and search engines, as brought about by their poor connectivity since most reside in rural areas. Therefore, their lack of access to e-learning resources is a barrier to their familiarity and utilization, leading to a "moderate" technological difficulty level.

These results correspond to that of Wahyuningsih et al. (2021), affirming that teachers are not well equipped in terms of utilizing e-learning resources which may be rooted in their lack of technical ability the use devices and tools in creating digital learning resources, not being strategic in terms of organizing materials to be applied to learning resources, and the lack of skills in managing digital learning resources. Teachers are therefore advised by the latter researcher to work with educational technologists for them to be guided by the different know-how.

Table 5

Teachers' Level of Technological Difficulties according to e-Learning Resources

Items	Mean	Interpretation
As a teacher, I have difficulties in...		
1. accessing search engines (like google and *bing*) due to slow internet connectivity.	2.76	Moderate Level
2. searching the internet because my device/s lag/s whenever I use the browser.	2.92	Moderate Level
3. downloading educational videos from YouTube.	2.57	Moderate Level
4. shortening long URLs.	2.8	Moderate Level
5. accessing e-learning sites like Scribd, Coursera, Khan Academy, and or TedEd due to not having premium subscriptions.	2.73	Moderate Level
6. updating and optimizing my browsers regularly.	2.93	Moderate Level
7. searching websites since they offer a poor user experience on smartphones and tablets and are slow to load on mobile devices.	2.75	Moderate Level
8. utilizing search engines because of the poor navigation set-up, thus, not user-friendly.	2.95	Moderate Level
9. utilizing images on the web because they are not search-friendly.	2.76	Moderate Level
10. searching the internet because the web pages load at a slow pace.	2.85	Moderate Level
11. searching the web because of poor internet searching strategies.	2.86	Moderate Level
12. I searched the web because e-learning applications are unavailable on my device/s.	2.75	Moderate Level
13. searching the web because I don't have an updated antivirus to protect my computer from browsing or downloading from internet sites.	2.84	Moderate Level
14. searching the web because there are too many hits, I am not sure which is to choose best.	2.89	Moderate Level

15. utilizing Open Educational Resources like DepEd Commons due to log-in issues.	2.82	Moderate Level
Overall Mean	**2.81**	**Moderate Level**

Difference in the Level of Technological Difficulties Encountered by Public School Teachers in the New Normal in the Area of Microsoft Programs when Grouped according to Selected Variables

The Mann-Whitney U test was used in Table 6 to determine the significant difference in the level of technological difficulties teachers encountered in Microsoft Office applications when respondents are grouped according to the variables. Results show that there is no significant difference in the level of technological difficulties in the new normal in the area of Microsoft Office applications when respondents are grouped according to age [U=932.000, p=0.843], sex [U=883.50, p=0.707], civil status [U=827.000, p=0.487], highest educational attainment [U=725.000, p=0.458], and average family monthly income [U=859.50, p=0.834].

Therefore, the results accepted the null hypothesis that the level of technological difficulties teachers encounter in the new normal in the Microsoft Office applications is not significant when respondents are grouped according to their demographic profiles.

Results are parallel to the study of Mahdi & Al-Dera (2013), affirming that there is no significant difference in the level of difficulty in the use of ICT, particularly of commonly used programs like Microsoft Office, when respondents are grouped according to age and sex. Likewise, the above difficulty level is not significant even though teacher respondents are grouped according to their civil status, average monthly family income, and highest educational attainment (Gelocio & Comighud, 2020). This implies that respondents, regardless of age, sex, civil status, highest educational attainment, and average monthly family income, have the same or common answers on items that measure their difficulty level in Microsoft Office applications.

Table 6

Difference in the Level of Teachers' Technological Difficulties according to the Microsoft Office Application and Selected Variables

Variable	Category	N	Mean	Mann Whitney U	p-value	*Sig. level*	Interpretation
Age	Younger	49	44.02	932	0.843		Not Significant
	Older	39	45.1				
Sex	Male	35	43.24	883.5	0.707		Not Significant
	Female	53	45.33				
Civil Status	Single	33	46.94	827	0.487	0.05	Not Significant
	Married	55	43.04				
Highest Educational Attainment	Lower	62	45.81	725	0.458		Not Significant
	Higher	26	41.38				
Average Family Monthly Income	Lower	57	44.08	859.5	0.834		Not Significant
	Higher	31	45.27				

A Comparative Analysis on the Level of Technological Difficulties encountered by Public School Teachers in the New Normal in Multi-Media Platforms when Grouped according to Selected Variables

The Mann Whitney U test was used in Table 7 to determine the significant difference in the level of technological difficulties teachers encountered in multimedia platforms when grouped according to variables. Results show that there is no significant difference in the level of technological difficulties in the new normal in the area of multimedia platforms when respondents are grouped according to age [U=818.50, p=0.249], sex [U=843.50, p=0.473], civil status [U=877.00, p=0.792], highest educational attainment [U=731.000, p=0.492], and average family monthly income [U=832.50, p=0.656].

The findings of the researchers debunk that of Villanueva & Niguidula (2019), which indicated that the utilization of multimedia platforms is significant when teachers are grouped according to their age and sex. On the other hand, Gelacio & Comighud (2020) noted that the level of competence and utilization of Information and Communication Technology (ICT) in the school systems are not significantly different when teacher respondents are grouped according to age, sex, as well as according to their civil status, average monthly family income, and highest educational attainment.

Therefore, the results accepted the null hypothesis that teachers' level of technological difficulties in the new normal in the area of multimedia platforms is not significant when respondents are grouped according to their demographic profiles. This implies that respondents, regardless of their age, sex, civil status, highest educational attainment, and average monthly family income, have just the same or common answers on items that measure their difficulty level in the area of multimedia platforms.

Table 7

Difference in the Level of Technological Difficulties Encountered by Public School Teachers in the New Normal in Multi-Media Platforms when Grouped according to Selected Variables

Variable	Category	N	Mean	Mann Whitney U	p-value	*Sig. level*	Interpretation
Age	Younger	49	41.7	818.5	0.249		Not Significant
	Older	39	48.01				
Sex	Male	35	42.1	843.5	0.473		Not Significant
	Female	53	46.08				
Civil Status	Single	33	45.42	877	0.792	0.05	Not Significant
	Married	55	43.95				
Highest Educational Attainment	Lower	62	45.71	731	0.492		Not Significant
	Higher	26	41.62				
Average Family Monthly Income	Lower	57	43.61	832.5	0.656		Not Significant
	Higher	31	46.15				

Difference in the Level of Technological Difficulties encountered by Public School Teachers in the New Normal in e-Learning Resources according to Demographics

The Mann Whitney U test was used in Table 8 to determine the significant difference in the level of technological difficulties encountered by teachers in the new normal in the area of E-learning resources when grouped according to variables. Results show that there is no significant difference in the level of technological difficulties in the new normal in the area of E-learning resources when respondents are grouped according to sex [U=762.000, p=0.155], civil status [U=873.000, p=0.766], highest educational attainment [U=730.000, p=0.486], and average family monthly income [U=854.000, p=0.796]. However, technological difficulty level in the aforementioned area is found to be significantly different when

respondents are grouped according to age [U=689.000, p=0.025], indicating higher difficulty level among older teachers.

Former results, therefore, accepted the null hypothesis, which states that teachers' level of technological difficulties in the new normal in the area of multimedia platforms is not significant when respondents are grouped according to their sex, civil status, highest educational attainment, and average family monthly income. This implies that respondents, regardless of their aforementioned demographic profile, have just the same or common answers on items that measured their difficulty level in the area of multimedia platforms.

Meanwhile, the latter finding follows Czaja et al. (2006), affirming that age becomes a factor in a person's technological competency. The latter asserted that an older person is not that efficient in some technological areas brought about by the cognitive gap. Often, older people are faced with computer anxieties, which sometimes impede them from utilizing technology to the maximum extent.

The researchers, therefore, rejected the null hypothesis asserting that the level of technological difficulties encountered by teachers in the new normal in the area of multimedia platforms is not significant when grouped according to age. This leads to an implication that the responses of the subgroups on items are not the same, with older respondents having a greater difficulty level on e-learning resources, with a mean score of 51.33 than the younger respondents, with a mean score of 39.06. Therefore, with the significantly higher difficulty level of older teachers, it is further implied that the latter should be well-assisted in technological utilization. They should be more welcoming to the technological changes that take place for them to cope with such trends.

Table 8
Difference in the Level of Teachers' Technological Difficulties according to e-Learning Resources

Variable	Category	N	Mean	Mann Whitney U	p-value	*Sig. level*	Interpretation
Age	Younger	49	39.06	689	0.025		Significant
	Older	39	51.33				
Sex	Male	35	39.74	761	0.155		Not Significant
	Female	53	47.64				
Civil Status	Single	33	45.55	873	0.766	0.05	Not Significant
	Married	55	43.87				
Highest Educational Attainment	Lower	62	45.73	730	0.486		Not Significant
	Higher	26	41.58				
Average Family Monthly Income	Lower	57	43.98	854	0.796		Not Significant
	Higher	31	45.45				

Conclusion

After analyzing the findings of this study, it can be concluded that teachers are indeed getting better at utilizing Microsoft Office programs. Refresher courses or training, especially in Microsoft Excel, are recommended to further enhance their skills in the said area. However, their "moderate" difficulty level in multimedia platforms and e-learning resources implies they struggle to maximize the potential benefits of those areas despite them having the know-how of such, as brought about by common factors like lack of better internet connectivity and the non-availability of Information and

Communication Technology (ICT) in the school system and perhaps, in their homes, too. Provisioning ICT-based equipment and enhancing facilities is recommended to raise the teacher's competence in the said areas. Results further indicated the varying technological difficulties in the three areas when respondents were grouped according to their demographic profile. However, the non-significance of the mean score differences in the areas of Microsoft Office programs, multimedia platforms, and e-learning resources (except when grouped according to age) implies that there is no inferior nor superior subgroup in terms of their level of technological competence and/or difficulty in the aforementioned areas. However, the significance of the mean score differences in the e-learning resources when grouped according to age leads to a conclusion that younger teachers tend to utilize and integrate more e-learning resources in the teaching-learning process than the older group due to the former's lower difficulty level than the latter. Training and peer-to-peer tutorials/assistance are recommended to help the more senior teachers cope and decrease their difficulty level in the said area.

The Intervention Plan

Rationale

Information and Communications Technology (ICT) play a vital role in delivering quality education to learners amidst the COVID-19 pandemic. Therefore, the researchers proposed a 1-year intervention plan which aims to upskill teachers' competence and minimize their difficulties in terms of Microsoft Office programs, multimedia platforms, and e-learning resource utilization. Their re-skilling will be made possible by the conduct of training and seminars which are to update the educators about MS Office programs' functions and updates and to remind them of the importance of the use of e-learning resources and multimedia platforms, as well as the proper use of such especially in the educational setting.

This proposed intervention plan will facilitate further teachers' continuous learning of technology to depreciate their technological difficulties as it was found out that public high school teachers in this specific school are still having low to moderate levels of difficulty in the utilization of technology in the workplace when grouped according to their demographics such as age, sex, civil status, average monthly family income, and highest educational attainment.

Objectives

This chapter presents the proposed one-year work plan to be implemented in one national high school in the District of Murcia, Division of Negros Occidental.

After the implementation of the intervention plan, the teachers should have the following:

1. Revisited key competencies in using MS Office programs, multimedia platforms, and e-learning resources utilization;
2. Acquired further competencies in the use of Microsoft Office programs, multimedia platforms, and e-learning resources;
3. Integrated multimedia platforms in the teaching and learning process;
4. Enriched class discussions and personal awareness through e-learning resources, especially those that are found in the DepEd commons; and
5. Become at least proficient in utilizing e-learning resources regardless of the teachers' age.

PROPOSED INTERVENTION PLAN

Areas of Concern	Findings	Objectives	Strategies	Time Frame	Budgetary Requirement	Persons Involved
Microsoft Office Programs	Difficulty in familiarity with the parts and functions of Microsoft Office Programs, especially in Spreadsheet Inability to integrate and utilize Microsoft Office programs in the profession.	To address the teachers' need for the familiarity and integration of Microsoft Office Programs in the profession.	Conduct refresher courses, training, and workshops with the use of Microsoft Office programs to revisit the basics and reintroduce the complex functions of the tools	This activity can be done during the department's LAC sessions or in-service training.	None	Master Teacher Teachers ICT Coordinators School Heads
Multi-Media Platforms	Moderate level of difficulty with multimedia platforms in delivering the lessons to the learners.	To integrate and make teachers familiar with and utilize the different multimedia platforms in delivering the teaching-learning process.	Utilization of school facilities such as computer laboratories and internet connectivity Organize training and workshops to use and integrate multimedia platforms like Google Classroom, Facebook, Zoom, etc., to deliver lessons to the learners.	This activity can be done during the department's LAC sessions or in-service training. It should be done first before the opening of classes.	None	Teachers Students Master Teacher Teachers ICT Coordinators School Heads
E-Learning Resources	Moderate level of difficulty with e-Learning resources. Inability to utilize e-Learning resources as a supplementary reference and teaching basis. Older teachers are less proficient in utilizing E-learning resources as compared to their counterparts who are the younger ones. Inability to access DepEd-related e-learning resources such as DepEd Commons and Professional Development LMS.	To introduce the different learning resources to the teachers and to properly utilize and integrate the said resources into the profession. To encourage peer teaching and learning between older and younger teachers.	Organize training and workshops in the utilization of e-learning resources. Reintroduce DepEd Commons and PD LMS to the teachers and address log-in-related concerns through the proper channel. Initiate peer tutoring between teachers that are younger and older, especially during office hours, to encourage sharing of ideas and know-how on the use of E-learning resources	This activity can be done during the department's LAC sessions or in-service training. Throughout the academic year, when it is convenient for the teachers to collaborate with one another on the utilization of E-learning resources.	None	Master Teacher ICT Coordinators School Heads Younger and older teachers

	Internet connectivity issues					

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