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Instructional Technology Competence, Challenges and Coping Mechanism Among Social Studies Teachers: Basis for a Proposed ICT - Learning Action Cell

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Abstract

Technology is vital to teaching and learning. Technology is applied science. Educators can use it in the classroom and throughout the system. It helps pupils engage in discussions. Technology can be used as a research tool, assessment tool, manipulator, and more. It helps teachers motivate kids to learn through virtual classroom and global community chances. Cervera (2021) said COVID-19 harmed schooling. Kids must learn at home when schools close suddenly. Technology can connect teachers and students during a pandemic. This strategy focuses on teacher competencies to foster engaging student learning.

As this study focuses on social studies, teachers are urged to employ modern technology to help students succeed online (BrainCert, 2020). The gap exists in delivering efficiently and competently with the shift to instructional technology. Despite the hindrances, teachers are always open for improvements and willing to adopt the changes that society has brought up in their profession. Consequently, this study made use of a descriptive quantitative research design wherein the respondents were social studies teachers from Grade 7-12.

Based on the data gathered from the respondents it was found out that there is no significant relationship between the level of competency of the teachers in the use of innovative instruction utilizing technology and the challenges experienced and the coping mechanisms used to address the challenges in the use of information and communication technology. Hence, it was recommended by the researcher that, the school leaders should consider employing the Learning Management Systems, ICT rooms available in the school should be given access to teachers, other modalities in teaching and in learning can be used alternatively, and school leaders should invest in free or paid online resources.

Keywords: Technology, Coping Mechanism, Social Studies, Teachers

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I.Introduction

There is no doubt that technology plays an increasing role in teaching and learning. Technology is scientific knowledge that applies to various fields. In education, it is a resource that educators can utilize within a classroom and throughout the educational system. It also meets the needs of students to help them to engage more in a discussion. Technology is highly accommodating throughout a curriculum as it serves as a research tool, assessment tool, manipulative and more. It serves as a tool for teachers to motivate and help students to be more determined to learn through multiple opportunities in the virtual classroom and within the global community. In this digital era, the changes in PC and information technology are also affecting the learning and education of the students in the 21st century. In general, the Internet has been a way for examination and information-gathering. Nowadays, new models of education begin to sprout as well as interpersonal interaction destinations. Additionally, according to an article by Siemens (2016), the open-source and open-access developments and advances in portable technologies have changed instructing and learning rehearses. It is necessary to acknowledge that, as teachers and students are engaged in using technology, this creates many opportunities to be benefited in the integration of some forms of technology making learning and teaching more effective and efficient. Technology can improve engagement as it encourages active participation in the learning process. It can also boost the retention of knowledge in a student's mind as they are more engaged in this kind of innovative learning mode. Through the incorporation of technology in schools, changes take place in the teacher and student's way of gathering, accessing, analyzing, presenting, and transmitting the information.

In addition, Cervera (2021) suggested in an article that, as the COVID-19 pandemic has affected every part of the world, it has affected the field of education. Schools are suddenly closed, and the education becomes at stake moving it within each students' homes. Technology seems to be the only way of connecting teachers and students amid the pandemic. One of the purposes of this implementation is the creation of engaged and effective learning experiences for students through the competence and skills of the teachers. As this study focuses on social studies, teachers are challenged in taking their students to the history through the utilization of technologies available for them to help the students prepare for success in the digital era (BrainCert, 2020). The gap exists in delivering efficiently and competently with the shift to instructional technology. Despite the hindrances, teachers are always open for improvements and willing to adopt the changes that society has brought up in their profession.

Background of the Study

For this study, the researcher aims to determine the competence, challenges, and coping mechanisms of Social Studies teachers in utilizing information and communication technology in teaching at the City Schools Division of Dasmarinas, Cavite, S.Y. 2021-2022. More specifically, the schools that shall be part of the study are: (1) Dasmariñas East Integrated High School with 177 junior high school teachers and 32 senior high school teachers, (2) Dasmariñas Integrated High School with 250 junior high school teachers and 98 senior high school teachers, (3) Congressional Integrated High School with 135 junior high school teachers and 37 senior high school teachers, and lastly (4) Langkaan National High School with 82 Junior High School teachers.

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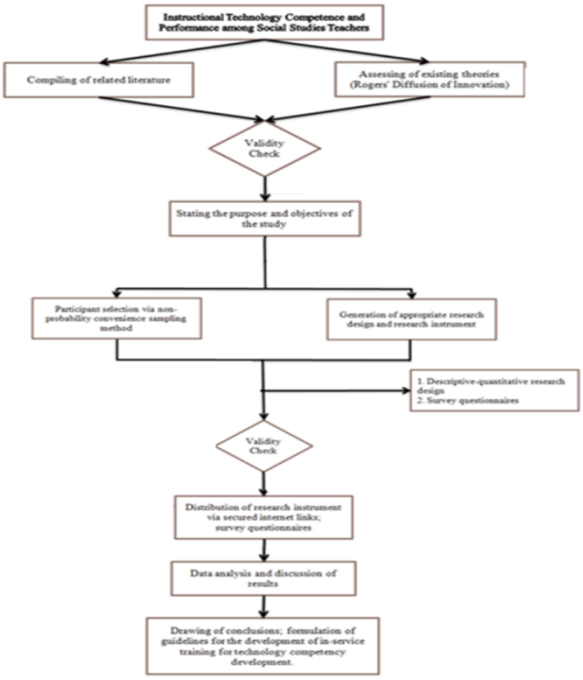
II. Methodology.

Research Design



Schematic Diagram of Research Flow

The study will utilize a descriptive-quantitative research design. Data gathered from the respondents will be treated statistically and presented using numerical interpretations through tables and figures. Before the necessary treatments, the data will be verified by holding a short interview on the experience of the respondents as teachers as a confirmation that the respondents are teachers that have used ICT in teaching.

The respondents of this study shall be social studies teachers of grades 7 to 12, from schools in City Schools Division of Dasmarinas. A total of 60 respondents was selected using the non-probability convenience sampling method. Convenience sampling is a type of non-probability sampling method that chooses respondents because they are "convenient" sources of data for the researcher. The proponent of this sampling technique will determine, and gain respondents based on careful ethical considerations.

Grade Level of Social Studies Teachers	Number of Respondents
Grade 7	10
Grade 8	10
Grade 9	10
Grade 10	10

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Grade 11	10
Grade 12	10
Total	**60**

Data Analysis

In this study, the researcher shall employ different statistical treatments to analyze the data to be gathered from the respondents. These statistical treatments will be essential in analyzing the data gathered from the self-made checklist survey questionnaires that will be given to the respondents. The statistical treatments that are utilized for the study will be the Standard Deviation, and the T-test of equal samples.

The Standard Deviation will be utilized to evaluate the teachers' level of competency on their use of innovation instruction utilizing technology in terms of information development, information presentation, and technology-based learning environment. Together with teachers' performance in terms of instructional delivery skills and instructional assessment skills will be part of the evaluation. From the formulated survey checklist questionnaire, the answers of the respondents will be computed by using the weighted mean formula based on the total sum of the answers as described from a Likert scale that is applicable in the created survey questionnaire.

The PEARSON r was employed to determine the significant relationship in the level of knowledge and competency and challenges of the use of information and communication technology in teaching social studies. The formula will measure the strength and significance between two variables, to produce a proposed guideline that will be a basis for developing an in-service training for improving the competency of the teachers.

III. Results and Discussion

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Table 1.A. Weighted Mean and Standard Deviation of the Teacher's Level of Competency in their use of Innovative Instruction Utilizing Technology in terms of Information Development.

Indicators	Mean	Std. Deviation	Interpretation
1. Using Learning Management System (LMS) as a form of online platform in providing learning tasks and monitoring students' performance at Araling Panlipunan.	3.63	.581	High
2. Combining laptop or computer and the web to create educational content in Araling Panlipunan with the help of reliable resources found on the internet and educational applications.	3.32	.676	Moderate
3. Utilizing cooperative learning approach and web-based applications to assign tasks in small groups in Araling Panlipunan subject.	3.53	.596	High
4. Using various educational assessment application tools such as quizit in integrating competition in Araling Panlipunan to assess student's competence .	3.58	.497	High
5. Creating online assessments (quizzes, examination) to track the improvement of students' learning in Araling Panlipunan..	3.48	.652	Moderate
6. Determining the most essential learning competencies in the subject of Araling Panlipunan sustaining the students' need that can be considered indispensable and will equip learners for a lifelong learning.	3.45	.654	Moderate
7. Motivating students to create daily personal anecdotes of their learning in Araling Panlipunan.	3.37	.610	Moderate
8. Teaching the importance of assessing validity and reliability of a resource and content in the internet, associated with the contents and lessons of Araling Panlipunan.Using technology-based material equivalent to e-b or E-books in place of physical copies of books and references.	3.40	.558	Moderate
9. Giving feedback for improvement and recognition to student's excellent performance using comment sections of google classroom in Araling Panlipunan.	3.25	.600	Moderate
10. Collection and checking of students' outputs using ICT enables them to have appropriate corrective feedback to learners.	3.40	.694	Moderate
Overall Mean	3.44	.201	Moderate

Among the following indicators presented in the table, the highest mean computed was from statement no. 1 which says that the teachers use a slideshow as a form of visual communication presentation wherein a series of still images displayed from a projector or electronic screen as a form of innovative instruction. This obtained a computed mean of 3.63 which was interpreted that the teachers have a high level of competency in using Learning Management System (LMS) as a form of online platform in providing learning tasks and monitoring students' performance at Araling Panlipunan.

The result indicates that the teachers are highly knowledgeable utilizing advanced technology to adapt to their teachings; which is not limited to available hardware resources but also integrated softwares to aid with their tasks. This also implies that the teachers highly utilized this form of instruction since the teacher's considered themselves to be highly competent in using this teaching resource.

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Table 1.B. Weighted Mean and Standard Deviation of the Teacher's Level of Competency in their use of Innovative Instruction Utilizing Technology in terms of Information Presentation

Indicators	Mean	Std. Deviation	Interpretation
1. Using slideshow during Araling Panlipunan class as a form of visual communication presentation wherein a series of still images displayed from a projector or electronic screen.	3.58	.619	High
2. Creating audio-visual presentations using video editors such as viseme, viva video and other platforms.	3.25	.600	Moderate
3. Creating interactive presentations that will keep students entertained and interested in the lesson.	3.48	.567	Moderate
4. Utilizing online presentation tools software's such as Canva as an alternative to PowerPoint presentation.	3.58	.530	High
5. Using creative themes of presentations that fits in the lesson content of Araling Panlipunan.	3.52	.596	Moderate
6. Showing mastery in using transitions and animation features in presentations.	3.45	.723	Moderate
7. Creating animated presentations and video platforms for creating short informational videos and presentations about your topic.	3.47	.650	Moderate
8. Using interactive cursors to highlight, encircle and emphasize words in PowerPoint presentation during the AP class.	3.25	.704	Moderate
9. Arranging content under different sections and creating an overview so your audience can see your entire presentation plan that practices your organization.	3.32	.596	Moderate
10. Reconstructing existing creative presentations uploaded online.	3.25	.600	Moderate
Overall Mean	3.42	.206	Moderate

Among the following indicators presented in the table, the highest mean computed was from statement no. 1 which says that there is high effectiveness in teachers using slideshow during Araling Panlipunan class as a form of visual communication presentation wherein a series of still images displayed from a projector or electronic screen. This is tied with statement no. 4 stating that teachers are highly utilizing online presentation tools software's such as Canva as an alternative to PowerPoint presentation. This obtained a computed mean of 3.58 which was interpreted that the teachers have a high level of competency in maximizing Information Presentation via technology.

The result indicates that the teachers are highly knowledgeable in different arsenal of technological softwares to effectively utilize their presentations. This also implies that the teachers highly utilized technology as their teaching medium.

Table 1.C. Weighted Mean and Standard Deviation of the Teacher's Level of Competency in their use of Innovative Instruction Utilizing Technology in terms of Technology-Based Learning Environment

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Indicators	Mean	Std. Deviation	Interpretation
1. Creating pre-recorded videos to serve as a class discussion during asynchronous time in Araling Panlipunan.	3.57	.647	High
2. Using different interactive platforms such as discord, google classroom and Canva for distribution of materials in AP.	3.25	.704	Moderate
3. Meeting and discussing with students in real time using video conferencing applications through synchronous class sessions during Araling Panlipunan class.	3.43	.722	Moderate
4. Creating a separate account for personal use and educational use to showcase mastery in a technology-based learning environment and setting boundaries about personal privacy.	3.43	.647	Moderate
5. Using social media platforms as a mode of communication with the students such as creation of group chats in messenger for AP subjects.	3.45	.622	Moderate
6. Applying technology-based competition for students as part of their grading system (project) such as video making about certain topics related to AP subject gathering social media reactions as part of the rubrics.	3.37	.610	Moderate
7. Mastery of utilizing google meet and zoom meetings- creating meetings, monitoring student attendance and promoting student engagement during AP discussion.	3.38	.613	Moderate
8. Using google docs, form, spreadsheet and etc. for class attendance monitoring, assessment and type-written materials in AP subject.	3.23	.851	Moderate
9. Maximizing the use of cloud-based storage such as google drive, drop box and etc. for storing large class files and submitted works in AP subject.	3.45	.622	Moderate
10. Applying the knowledge from webinars that strengthen the skills and mastery in utilizing educational tools, including assessing the risk of exposure to cyber crimes and how to be more cautious during engagement in AP.	3.30	.591	Moderate
Overall Mean	3.39	.218	Moderate

Among the following indicators presented in the table, the highest mean computed was from statement no. 1 which says creating pre-recorded videos to serve as a class discussion during asynchronous time in Araling Panlipunan. This obtained a computed mean of 3.57 which was interpreted that the teachers have a high level of competency in preparing the educational materials to be used for class discussions.

The result indicates that the teachers are highly knowledgeable in utilizing technology to adapt with the current learning medium standards. The technology shifts over the last decades have brought additional tools to make teaching more convenient and the results effectively shows this is evident for the teachers.

Table 2. Weighted Mean and Standard Deviation of the Challenges Experienced by the Teachers in using Information and Communication Technology

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Indicators	Mean	Std. Deviation	Interpretation
1. Encountered internet connectivity issues in using ICT for Instruction.	3.68	.504	Strongly Agree
2. Adapting to the new normal of teaching is difficult in terms of adjustment and coping.	3.30	.619	Agree
3. Providing equipment such as laptop and printer are necessary in teaching, but it is difficult.	3.48	.651	Agree
4. Applying the practical skills with integration of ICT in teaching is challenging.	3.50	.567	Strongly Agree
5. Communications among students are difficult because of the students' varied access to internet connection.	3.55	.534	Strongly Agree
6. Solving problems with critical thinking skills, relational abilities, and decisive reasoning to guarantee the effectiveness of digital instruction with ICT is difficult.	3.42	.561	Agree
7. Organization of classroom activities are not easy in digital instruction because of the technical difficulties.	3.38	.640	Agree
8. Maintaining the attention and interest of the learners throughout the discussion is hard due to technological distractions.	3.35	.577	Agree
9. Honing the practical skills in immersion and seminars for the students' performance can be difficult with ICT instruction.	3.33	.655	Agree
10. Having no appropriate software such as Learning Management Systems (Canvas, Neo), makes the use of ICT dull.	3.18	.813	Agree
Overall Mean	3.42	.190	Agree

Among the statements being presented, it was shown that the highest computed mean of 3.68 was computed from statement no. 1. Statement no. 1 states that the teachers encountered internet connectivity issues in using ICT for Instruction. This was strongly agreed by the majority of the respondents hence, gaining the highest mean among the ten (10) statements.

Table 3. Weighted Meand and Standard Deviation of the Coping Mechanisms used by the Teachers to Address the Challenges in Information and Communication Technology

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Indicators	Mean	Std. Deviation	Interpretation
1. Providing stable internet connection and a backup internet to teach online during the new normal.	3.60	.588	Strongly Agree
2. Acquiring new knowledge in working with ICT by attending webinars and trainings organized by DepEd, makes it less difficult to adjust from traditional to online teaching.	3.60	.494	Strongly Agree
3. Providing the basic equipment needed to teach in the online setup such as laptop, printer, and internet connection through the financial help of friends and families.	3.55	.502	Strongly Agree
4. Practical tasks are done asynchronously rather than during online sessions in order for students to have a hands-on experience on practical tasks that was given to them.	3.53	.566	Strongly Agree
5. Utilizing different mediums of communication such as through instant messaging, text messaging, and mobile phone calls are to connect with students regardless of their internet connection status.	3.73	.516	Strongly Agree
6. Providing worksheets and activities that require real-life applications so students can have an in-depth and practical experience in solving complex problems.	3.53	.623	Strongly Agree
7. Beside online master list, keeping a written documentation of all the activities that was given to students, and the plotting of upcoming activities.	3.48	.676	Agree
8. Providing adequate online resources and instructional materials (Canvas, Neo) which require payment for accessibility.	3.22	.783	Agree
9. Making lectures more interactive so that students can showcase and hone their academic performance during online classes.	3.58	.561	Strongly Agree
10. Making presentations lively and engaging so that students become more attentive and involved in discussions during online classes.	3.62	.555	Strongly Agree
Overall Mean	3.55	.201	Strongly Agree

Among the ten (10) indicators presented in the table above it was shown that the highest computed mean was from statement no. 5. Statement no. 5 gained a computed mean of 3.73 and states that the teachers strongly agree that they utilize different mediums of communication such as through instant messaging, text messaging, and mobile phone calls are to connect with students regardless of their internet connection status.

This result indicates that most of the teachers find a way to communicate among their students since not all of them are able to have access in learning resources during the incorporation of online learning in education. This also means that the teachers are flexible in the use of other technologies to reach out to their students despite the boundaries brought in the drastic shift in learning.

IV. Conclusion

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In accordance with the findings of the study, it was revealed that the majority of the respondents make use of available platforms in teaching through the use of modern technology. Specifically, in terms of information development; it has been identified that teachers effectively use the Learning Management System as a tool to maximize their effectiveness in teaching, not accounting those who have little access to the tool. In terms of information presentation, the teachers are comfortable in curating materials through slideshows. For the technology based-learning environment, teachers are inclined to produce pre-recorded materials to help facilitate their discussions. Consequently, it was also revealed that the use of e-books as references in teaching and in learning were not widely used by the teacher. Furthermore, among the challenges faced by the teachers in the use of information and technology is the slow internet connection or connection problems. In accordance with this, the teachers cope up with problems in internet connectivity through finding ways on how to reach out among their students.

Recommendation

In accordance with the results of the gathered data from the respondents, the researcher generated the following recommendations:

1. The school leaders can provide the teachers with electronic resources such as e-books and implement their utilization to also help the students financially for those schools that prefer the use of physical books.

2. ICT rooms available in the school should be given access to teachers when teaching online, especially to those teachers who have no devices that can be used in teaching and always experience internet connection problems.

3. Learning or study materials should be available offline among the teachers and they should be given a copy to cope up with the internet connectivity problems that they face.

4. Other modalities in teaching and in learning can be used alternatively if most of the students do not have internet access so that no student will be left behind from learning.

5. School leaders should invest in free or paid online resources that can provide instructional materials and online learning interaction and activities among the students to widen the available learning resources that the teachers and the students can access.

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