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Digital Literacy Skills and Engagement on the Advanced Classroom Tools and Soft-Wares of Elementary Teachers in Relation to their Coping Skills

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Abstract

This study aimed to measure the relationship between Digital literacy skills of Elementary Teachers and their extent of engagement on the use of advanced digital classroom tools and software, Degree of digital literacy skills of Elementary Teachers and their coping skills, and the extent of engagement of Elementary Teachers on the use of the advanced digital classroom tools and software. The researcher utilized three survey questionnaires on Digital Literacy, Teachers' Engagement on Digital Classroom Tools and Software, and Teachers' Coping Skills. The following survey was conducted through google forms, 60 Elementary Teachers from 10 selected private schools in Cavite, Philippines was purposefully chosen to be the respondents of this study, hence, Descriptive correlation method was employed. In the light of statistical analysis and the findings of this study, the following conclusions and recommendations were drawn: First, Elementary Teachers have a high degree of literacy in performing tasks successfully in a digital environment, with digital meaning information represented in numeric form and basically for utilization through a computer. Second, Elementary Teachers in selected private schools in Cavite, Philippines are moderately engaged on the Use of Advanced Digital Classroom Tools and Software. Third, Elementary Teachers have a moderate level of coping skills which involves steady value or religious belief system, problem solving, social skills, health-energy, and commitment to a social organization. Fourth, there is a significant relationship between the digital literacy skills of Elementary Teachers in terms of operational skills and creative use and their extent of engagement on the use of advanced digital classroom tools and software. Fifth, there is a significant relationship between the digital literacy skills of Elementary Teachers in terms of information navigation and creative use and their coping skills. Sixth, there is a significant relationship between the extent of engagement of Elementary Teachers on the use of advanced digital classroom tools and software and their coping skills. The overall findings influenced the researcher to develop a Technology Enrichment Program to further enhance the Degree of Digital Literacy Skills, Extent of engagement on the use of Advanced Digital classroom tools and software, and the coping skills of Elementary Teachers who participated in this study.

Keywords

Coping Skills, Digital Literacy, extent of engagement on digital tools and software.

INTRODUCTION

Today's world of a changing workforce, rapid developments in technological know-how and elevated global opposition suggests that learning is extra necessary and critical than before most especially during this time where COVID 19 forces everyone to engage into utilizing technology to restrain and control people from going out of their houses for work, schooling, leisure and other "normal" activities that involve face to face interaction and social exposure. This type of prohibition is one of the best precautionary measures in preventing the rapid spread of the virus, in this way, people will be protected from acquiring and passing through the virus. This compelling factor and situation encourages everyone to cope to the digital technology advancement particularly those who are involved in education. Educators are in any way expected to become proficient and able to cope with the recent changes in technology. At all levels, our education system is recognizing the need to change to meet the demands of a rapidly changing digital community. The need to have a long-term goal for education that gives assurance that all students experience agreeable result and have the knowledge, skills, abilities and competencies to be successful in the 21st century was never more significant. The "new normal" set up in the Educational System must be considered because of the unexpected and inevitable effect of the pandemic. The success of the students depends upon the Teachers Literacy in most areas of the teaching process that can be related to the significant utilization of digital technology to this present times. Many of us will already have an appreciation of the term literacy and what is ability to be literate. In the conventional interpretation it is the capacity to be in a position to study and write. This description predominantly bounces back the time in which it came in to frequent use and the presiding equipment for getting access to and communicating understanding and comprehending beyond oral discourse, i.e. written and printed textual content in physical forms. Teachers who are structuring digital literacy skills identify the fundamentals of Internet peril and safety such as creating strong passwords/ form of identification, understanding and

using privacy settings, and knowing what to share or not on social media. The competency of teachers on how to use this technology in the teaching-learning process has a significant impact on using them effectively. Although this study did not examine the attitudes of teachers, but this issue is vital for teachers on the use of technology. Those who have more years of experience and knowledge are more positive, because their attitude has also improved, which was a very important result because it will show that teacher training is an important factor in the effective use of Technology in the teaching and learning process. The aim of this research study is to scrutinize Elementary Teachers' digital literacy skills and engagement to serve as basis for enhanced technology-rich teaching program. The focus of this paper is on upgrading teachers' digital literacy to effectively improve their teaching to accommodate diverse needs of learners and the challenges they experience on their process of learning. ([14], 2018). Specifically, the following questions are to be answered by this research study: 1. What is the degree of Digital Literacy Skills of Elementary Teachers on the selected Private Schools in Cavite? in terms of the following: Operational Skill, Information Navigation, Social Use, Creative Use, Mobile and Computer Navigation, Digital Awareness 2. What is the extent of engagement of Elementary Teachers on the use of advanced Digital classroom tools and software? in terms of Video Conference and Collaboration Platform, Course Authoring Tools, Audience Engagement Tools, Learning Management System, Survey Tools, Screen Recording and Video Editing, Presentation Applications, File Sharing, Digital Notebook and Calendar Timetable, 3. What is the level of Teachers' coping skills? 4. How significant is the relationship between Digital literacy skills of elementary teachers and their extent of engagement on the use of advanced digital classroom tools and soft wares, Degree of digital literacy skills of elementary teachers and their coping skills, and The extent of engagement of elementary teachers on the use of the advanced digital classroom tools and software and their coping skills? 5. Based on findings of the study, what technology enrichment program may be proposed? This study will fulfill the need for the improvement of Digital Literacy Skills and Engagement of Elementary Teachers and their coping skills. This will also mean establishing strong digital literacy foundation among primary teachers and motivate primary pupils to positively engage in the digital technology use especially now that we are all facing COVID 19, where technology is a major part of our day to day living experiences particularly in learning/ education.

RESEARCH DESIGN

The descriptive correlation method was employed in this research study with the comprehensive description of the measure of relationship between the variables; degree of Digital Literacy Skills of Elementary Teachers and their extent of engagement on the use of advanced Digital classroom tools and software, their coping skills and the degree of Digital Literacy Skills of Elementary Teachers and their coping skills and the extent of engagement on the use of advanced Digital classroom tools and software of Elementary Teachers. One of the ways to secure a valid result from this study is through utilizing survey. In a survey, Elementary Teachers from 10 selected private schools in Cavite, Philippines were asked questions about the topic of concern. Through Descriptive Correlation method, each variable was critically and carefully examined and discussed as required in this study.

INSTRUMENTATION

The researcher utilized three survey questionnaires to fulfil the purpose of this study. The first research instrument is the Digital Literacy Questionnaire. This questionnaire is (ADAPTED FROM Jeong-Bae Son, Copyright 2015 and Alexander J.A.M. van Deursen, Ellen J. Helsper and Rebecca Eynon, Copyright 2014 https://www.lse.ac.uk/). The second research instrument is the Questionnaire on Teachers' Engagement on Digital Classroom and Software (Adapted from CLASSTER, copyright 2020 www.classter.com). The third research instrument is the Questionnaire on Teacher's Coping Skills, Adapted from: [3]. (2013). COPE Inventory. Measurement Instrument Database for the Social, Retrieved from www.midss.ie .

STATISTICAL ANALYSIS OF DATA

To find meaning in the data gathered, this study was subjected to the following statistical formula: 1. To determine the degree of digital literacy skills of Elementary Teacher's, frequency count, weighted mean and standard deviation were used, 2, To identify the coping skills of Elementary Teachers, frequency count, mean and standard deviation were employed. 3. To test the significant relationship between the teachers' digital literacy skills and their engagement, teacher's digital literacy skills and their coping skills, and teacher's engagement on the use of advanced digital classroom tools and software and their coping skills, Pearson r was applied.

RESULTS AND DISCUSSIONS

Digital Literacy Skills of Elementary Teachers in Private Schools

Table 1: Summary Table on Teachers' Digital Literacy Skills

Teachers' Digital Literacy Skills	Weighted Mean	Verbal Description	Rank
1. Social Use	4.64	Very Highly Literate	1
2. Operational Skills	4.55	Very Highly Literate	2
3. Digital Awareness	4.21	Highly Literate	3
4. Mobile and Computer Navigation	4.19	Highly Literate	4
5. Creative Use	3.45	Moderately Literate	5
6. Information Navigation	2.85	Moderately Literate	6

This table shows the Summary Table on Digital Literacy Skills of Elementary Teachers on the selected Private Schools in Cavite, Philippines. It shows an overall weighted mean of 4.35 (highly literate) with a low standard deviation of 0.58 between items, considered as homogenous which can be interpreted that each Elementary Teacher response in each item is nearly similar to each other. The results indicate that Elementary Teachers have a high degree of literacy in performing duties successfully in a digital environment, with digital meaning records represented in numeric shape and particularly for use through a computer. Two among the six items falls on the very highly literate level, two falls on the highly literate level and another two falls on the moderately literate level. The results presented on the table is supported by the statement of ([1], 2015) that as new literacies that include digital and media technologies expand, preparing students to comprehend and adapt to these literacy demands is crucial to present and future assumptions for enjoyment and work. As a matter of fact, teachers may recognize with previous models of literacy that are paper and pencil bound; nevertheless, new conceptions continually involve changing views of reading and writing, particularly with the occurrence of the Internet. These new literacies is made up of innovative text formats (multiple media or hybrid texts; new reader expectations (reading nonlinearly;) and new activities.

Extent of Engagement of Elementary Teachers on the Use of Advanced Digital Classroom Tools and Software

Table 2: Summary Table on the Extent of Engagement of Elementary Teachers on the Use of Advanced Digital Classroom Tools and Software

Digital Classroom Tools and Software	Weighted Mean	Verbal Description	Rank
1. Survey Tools	3.99	Highly Engaged	1
2. Video Conference and Collaboration Platform	3.98	Highly Engaged	2
3. File Sharing	3.52	Highly Engaged	3
4. Presentation Applications	3.14	Moderately Engaged	4
5. Learning Management System	2.94	Moderately Engaged	5
6. Screen Recording and Video Editing	2.45	Fairly Engaged	6
7. Digital Notebook and Calendar-Timetable	2.43	Fairly Engaged	7
8. Course Authoring Tools	2.38	Fairly Engaged	8
9. Audience Engagement Tools	2.35	Fairly Engaged	9

Table 2 shows the summary table on the extent of engagement of elementary teachers on the use of advanced digital classroom tools and software. It shows average (weighted mean of 3.02, moderately engaged) with a low standard deviation of 0.71 between items, considered as homogenous which can be interpreted that each Elementary Teacher response in each item is nearly similar to each other. The result indicates that Elementary Teachers in selected private schools of Cavite are moderately engaged on the Use of Advanced Digital Classroom Tools and Software.

According to ([7], 2015) There is indisputable evidence that digital equipment, tools and resources can, where effectively used, lever up the speed and profoundness of learning for primary and secondary age learners. There is suggestive evidence that the same can be said for some aspects of literacy, especially writing and comprehension. Digital technologies appear to be pertinent that intends to improve basic literacy and numeracy skills, especially in primary settings.

Level of Teachers' Coping Skills

Table 3: Summary Table on Elementary Teachers Level of Coping skills

Items	Weighted Mean	Verbal Description	Rank
1. Positive Reinterpretation and Growth	4.41	High Coping Skills	1
2. Mental Disengagement	3.30	Moderate Coping Skills	11
3. Focus on and Venting of Emotions	3.44	Moderate Coping Skills	10
4. Use of Instrumental Social Support	3.86	High Coping Skills	5
5. Active Coping	4.09	High Coping Skills	4
6. Denial	2.61	Moderate Coping Skills	13
7. Religious Coping	4.10	High Coping Skills	3
8. Humor	2.95	Moderate Coping Skills	12
9. Behavioral Disengagement	2.58	Moderate Coping Skills	14
10. Restraint	3.55	High Coping Skills	9
11. Use of Emotional Support	3.64	High Coping Skills	6
12. Substance Use	1.15	Least Coping Skills	15
13. Acceptance	3.57	High Coping Skills	8
14. Suppression of Competing Activities	3.60	High Coping Skills	7
15. Planning	4.23	High Coping Skills	2

This table shows the level of Elementary Teacher's coping skills. It shows average (weighted mean of 3.40, moderate coping skills) with a low standard deviation of 0.19 between items, considered as homogenous which can be interpreted that each Elementary Teacher response in each item is almost alike to each other. The result indicate that Elementary Teachers have a moderate level of coping skills which involves steady value or religious belief system, problem solving, social skills, health-energy, and commitment to a social organization. (Johnson, 2016) have mentioned that Teachers' attitudes and beliefs are crucial factors in determining the role and effectiveness of technology in classrooms. Attitudes and beliefs about both educational technology and pedagogy in general will ultimately influence how teachers implement technology. In the following sections, we discuss these issues and ways to promote positive attitudes that can optimize technology use.

Relationship between

Digital Literacy Skills of Elementary Teachers and the Extent of Engagement on the Use of Advanced Digital Classroom Tools and Software

Table 4.1 Summary Table on Pearson's r Test of Relationship between Digital Literacy Skills of Elementary Teachers and the Extent of Engagement on the Use of Advanced Digital Classroom Tools and Software

Correlated Variables		Computed r	Critical Value at 0.05	Significance	Decision
Digital Literacy Skills	Digital Classroom Tools and Software				
Operational Skills	Digital Classroom Tools and Software	0.329	0.259	Significant	Reject Ho
Information Navigation		0.119	0.259	Not Significant	Accept Ho
Social Use		-0.128	0.259	Not Significant	Accept Ho
Creative Use		0.261	0.259	Significant	Reject Ho
Mobile and Computer Navigation		0.065	0.259	Not Significant	Accept Ho
Digital Awareness		-0.059	0.259	Not Significant	Accept Ho

N= 60 df = (N-2) 58

The data in table 4.1 shows that there is a significant relationship between the digital literacy skills of Elementary Teachers in terms of operational skills since the computed r (-0.329 is greater than the critical value 0. 259 at 0.05 level of significance. There is also a significant relationship in terms of creative use since the computed r (-0.261 is greater than the critical value 0.259 at 0.05 level of significance), and their extent of engagement on the use of advanced digital classroom tools and software thus, rejects the null hypothesis. This implies that Elementary Teachers' Digital Literacy skills in terms of operational skills and creative use has a great impact on their extent of their involvement in the use of digital classroom tools and software. On the other hand, the data in table 4.25 shows that there is no significant relationship between the digital literacy skills of Elementary Teachers in terms of information navigation since the computed r (0.119 is lower than the critical value 0.259 at 0.05 level of significance), social use since the computed r (-0.128 is lower than the critical value 0.259 at 0.05 level of significance), mobile and computer navigation since the computed r (0.065 is lower than the critical value 0.259 at 0.05 level of significance), digital awareness since the computed r (-0.059 is lower than the critical value 0.259 at 0.05 level of significance), and their extent of engagement on the use of advanced digital classroom tools and software thus accepts the null hypothesis. This implies that Digital Literacy skills in terms of information navigation, social use, mobile and computer navigation and digital awareness has no strong association on the extent of their involvement in the use of digital classroom tools and software. The result obtained by this study is supported by the vantage point of ([10], 2020) that Digital literacy is a main element in education today. The future success of educators and students depends on them becoming digitally literate. This includes creating abilities and information that empower them to securely explore and observe all shapes of advanced technology.

Digital Literacy Skills of Elementary Teachers and their Coping Skills

Table 4.2 : Summary Table of Pearson's r Test of Relationship between Digital Literacy Skills of Elementary Teachers and their Coping skills.

Correlated Variables		**Computed r**	**Critical Value at 0.05**	**Significance**	**Decision**
Digital Literacy Skills	**Coping Skills**				
Operational Skills	Coping Skills	-0.060	0.259	Not Significant	Accept Ho
Information Navigation		0.597	0.259	Significant	Reject Ho
Social Use		0.011	0.259	Not Significant	Accept Ho
Creative Use		0.319	0.259	Significant	Reject Ho
Mobile and Computer Navigation		-0.081	0.259	Not Significant	Accept Ho
Digital Awareness		0.109	0.259	Not Significant	Accept Ho

N= 60 df = (N-2) 58

The data in table 4.2 shows that there is a significant relationship between the digital literacy skills of Elementary Teachers in terms of Information navigation and their coping skills since the computed r (0.597), creative use and their coping skills since the computed r (0.319) is greater than the critical value 0.259 at 0.05 level of significance), thus, rejects the null hypothesis. This implies that Elementary Teachers' Digital literacy skills in terms of information navigation and creative use has a strong effect on their coping skills. On the other hand, the data further reveals that there is no significant relationship between the digital literacy skills of Elementary Teachers in terms of operational skills and their coping skills since the computed r (-0.060), social use since the computed r is (0.011), mobile and computer navigation since the computed r is (-0.081), digital awareness since the computed r is (0.109) is lower than the critical value 0.259 at 0.05 level of significance, thus, accepts the null hypothesis. This implies that Elementary Teachers' Digital Literacy skills in terms of operational skills, social use, mobile and computer navigation and digital awareness has no remarkable impact on their coping skills. The results obtained are proven by the assertion of (Johnson, 2016) that Teachers' attitudes and beliefs are pivotal components in deciding the part and adequacy of innovation in classrooms. Attitudes and beliefs approximately both instructive innovation and instructional method in common will eventually impact how instructors execute innovation in terms of digital technology. In the following sections, we discuss these issues and ways to promote positive attitudes that can optimize technology use.

The Extent of Engagement of Elementary Teachers on the Use of Advanced Digital Classroom Tools and Software and their Coping Skills

Table 5: Result of Pearson's r Test on the Relationship between The Extent of Engagement of Elementary Teachers on the Use of Advanced Digital Classroom Tools and Software and their Coping Skills

Correlated Variables		Computed r	Critical Value at 0.05	Significance	Decision
Advanced Digital Classroom Tools and Software	Coping Skills				
Advanced Digital Classroom Tools and Software	Coping Skills	0.310	0.259	Significant	Reject Ho

N= 60 df = (N-2) 58

Table 5 shows that there is a significant relationship between the extent of engagement of Elementary Teachers on the use of advanced digital classroom tools and software and their coping skills since the computed r (0.310 is greater than the critical value 0.259 at 0.05 level of significance), thus, rejects the null hypothesis. This implies that the extent of engagement of Elementary Teachers on the use of advanced digital classroom tools and software has a strong connection on their coping skills. Faculty member attitudes toward technology, fear factors and complexity issues, lack of time and support, limited access, inadequate faculty development opportunities, and lack of organizational support have all been identified as major barriers to the infusion of technology into teacher preparation programs ([13], 2015)

CONCLUSIONS

Based on findings of the study, the following conclusions were drawn: 1. Elementary Teachers have a high degree of literacy in performing duties successfully in a digital environment, with digital meaning records represented in numeric shape and particularly for use through a computer. 2. Elementary Teachers in selected private schools of Cavite, Philippines are moderately engaged on the Use of Advanced Digital Classroom Tools and Software. 3. Elementary Teachers have a moderate level of coping skills which involves steady value or religious belief system, problem solving, social skills, health-energy, and commitment to a social organization**.,** 4.There is a significant relationship between the digital literacy skills of Elementary Teachers in terms of operational skills and creative use and their extent of engagement on the use of advanced digital classroom tools and software. There is no significant relationship between the digital literacy skills of Elementary Teachers in terms of information navigation, social use, mobile and computer navigation and digital awareness and their extent of engagement on the use of advanced digital classroom tools and software., 5. There is a significant relationship between the digital literacy skills of Elementary Teachers in terms of information navigation and creative use and their coping skills., 6. There is no significant relationship between the digital literacy skills of Elementary Teachers in terms of operational skills, social use and mobile and computer navigation and their coping skills., 7.There is a significant relationship between the extent of engagement of Elementary Teachers on the use of advanced digital classroom tools and software and their coping skills., 8. The overall findings influenced the researcher to develop a Technology Enrichment Program to further enhance the Degree of Digital Literacy Skills, Extent of engagement on the use of Advanced Digital classroom tools and software, and the coping skills of Elementary Teachers who participated in this study.

RECOMMENDATIONS:

Based on findings and conclusions of the study, the following recommendations are offered: 1.Elementary Teachers must undergo an intensive training on Digital Literacy Skills prioritizing in the areas of Creative Use and Information Navigation must be enhanced as well as in the areas of Digital Awareness and Mobile and Computer Navigation to help them achieve a very highly literacy skills in all of the 6 components of Digital Literacy Skills. 2. Elementary Teachers needs more exposure through hands on experience/ workshop on the use of digital classroom tools and software specifically on the areas that falls on the fairly engaged level such as Screen Recording and Video Editing, Digital Notebook and Calendar Timetable, Course Authoring Tools and Audience Engagement Tools. 3.Elementary Teachers needs more enlightenment through several programs that helps improve coping skills such as Mindfulness, Wellness Program and other activities related to enhancing coping skills particularly in the areas which falls on Moderate level of coping skills such as Mental Disengagement, Focus on venting of emotions, Denial, Humor and more importantly on the area which falls on Least level of coping skills such as Substance Use. 4. Elementary Teachers ought to receive a comprehensive and explicit training on Digital Literacy Skills in terms of Operational Skills and Creative Use and their Extent of Engagement on the use of Advanced Digital classroom tools and software. 5. School Administrators must be compelled to provide a thorough Faculty Development program for Teachers focusing on Technology Enrichment that will help improve their quality of teaching and to contribute well on their students digital learning experience.

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