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The Influence of the Use of Information Communication Technology on the Memory Function of 2nd Year College Students

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The objective of this study was to find out what domain in the use of information communication technology (ICT) significantly influences the memory function of 2nd year college students. The researcher used a quantitative, non-experimental research design utilizing causal effect technique in research and utilize downloaded, adapted, and modified questionnaire to gather the data. The respondents of this study were the 344 2nd year college students enrolled on any course of a college institution. Mean, Pearson-r, and Regression Analysis were the statistical tools used to interpret the data collected. The result of the survey revealed that the level of use of information communication technology with regards to e-mailing, media sharing, text messaging, video gaming, social media, phone calling and television viewing is high. Also, the level of memory function in terms of retrospective function, remembering past events and mnemonics usage is high. It was found out that there was a significant relationship between the use of information communication technology and memory function. Furthermore, e-mailing and phone calling both were the domains in the use of information communication technology that significantly influence the memory function of the 2nd year college students.

Keywords: Information Communication Technology (ICT), memory function, college students, Philippines.

1. Introduction

The failure to review data quickly and proficiently from memory when it is required may be related with shortfalls in encoding and capacity of data. Issues of the memory function like disappointment in classifying, storing, retrieving, trouble with remembering life occasions or scenes and issues with putting away data for performing abilities and strategies, both cognitive and psychomotor – will lead to shortages in memory function. Moreover, students who have trouble with memory function encounter issues with numerous higher task errands such as issue in understanding, comparing, and differentiating thoughts. Hence, the problem on

memory function is not just for school children but for all individuals is unending [22].

Memory is the predominant cognitive faculty that characterizes the transient measurement of our mental organization. It has the capacity to encode, store, hold, review information, and past encounters. Memory is basic to all learning, since it lets you store and recover the data merely learn. Learning and memory are so closely associated that individuals frequently confuse them with each other. In addition, memory depends on learning but learning too depends on memory, since the information put away in your memory gives the system to which you connect unused information by association. Therefore, the broader your system of existing information the more effectively you'll connect new information to it, given that the memory functions well [29].

The advent of technology through Information Communication Technology gives the development of making life easier and convenient. It means that these tools like medias, videos, devices, and the like would help everyone the ease of accessing information and making impossible be possible. Televisions, radio, and other audio-visual components can help bridge the gap of learning through reinforcement and meaningful process. The straightforward act of learning, using digital tools makes a difference in fortifying the brain which incorporates reinforcing memory function and utilizing the innovation to compensate memory problems. It has been contended that the common populace is expanding its cognitive capability, and thus Information Communication Technology tools are having an either impartial or unassumingly positive impact on our memory process [12].

However, the researcher has not come across the same study that was conducted on the influence of the use of ICT on the memory function on 2nd year college students. The fact that this common problem is chronic and has been a question before, the purpose of this study is to seek answer to the questions imposed on this study and to determine which of the domains of in the use of ICT significantly influences memory function. Thus, this study was conducted on the purpose of generating new knowledge that might be helpful for the community and for future researchers. It is in the interest and curiosity of the researcher to know if ICT would have an influence and be helpful in improving the memory function of the students. The beneficiaries of this study would possibly develop an action plan to improve classroom instruction better and school administration program efficiency, thus, the need to conduct this study. The importance of this study is to give contribution on the memory function through usage of ICT. It is stated that when ICT is used prudently, it may augment human cognition. It means to say that when ICT is integrated properly in a situation, it may improve and be made learning accessible and possible [32].

The findings of this study would be of help for the teachers and administration, as well as the students to improve the quality of learning. This study would help find alternative solutions for various student memory deficits through usage of ICT available on the school and community. The result may encourage betterment of the educational system and may change the current curriculum for the benefit of the students. In an actual setting, the chosen colleges have already practiced technology integration like televisions and audio-visual tools in learning. Thus, this will provide ideas and key points for the specified colleges to enhance the teaching-learning process.

Moreover, the study will also provide grounds for enhancement and improvement on

the quality of education in the society in terms of usage of Information Communication Technology in daily living in relation to cognition. This study would also give results, add contribution, and solve problems that may applicable to other sectors of the society of which utilization of the findings be appropriate. Information Communication Technology would be an instrument for curriculum modification while the findings of memory function would be the source of redefining the capabilities of the cognitive faculty. Taken both the variables together, the overall findings would serve as valuable keystone for societal changes, innovation, and breakthroughs [18].

Research Objectives

This study was conducted to determine which of the domain influences ICT to memory function of the 2nd year college students. Specifically, the study was conducted to seek answers on the following objectives:

1. To describe the level of the use of ICT of the 2nd year college students in terms of:

1.1 E-mailing;

1.2 Media Sharing;

1.3 Text Messaging;

1.4 Video Gaming;

1.5 Social Media;

1.6 Phone Calling; and

1.7 Television Viewing.

2. To describe the level of the memory function of the 2nd year college students in terms of:

2.1 Retrospective Functioning;

2.2 Remembering Past Events; and

2.3 Mnemonics Usage.

3. To find out the significant relationship between the level of the use of ICT and the level of memory function of the 2nd year college students.

4. To determine which of the domains in the use of ICT significantly influences memory function of the 2nd year college students.

Hypothesis

The hypotheses of the study were tested at 0.05 level of significance stating that:

1. There was no significant relationship between the level of the use of ICT and the level of memory function of the 2nd year college students.

2. There was no domain in the use of ICT that significantly influence the memory function of the 2nd year college students.

2. Review of Related Literature

Theories, concepts, facts, and related readings on the use of ICT on the memory function of students are presented on this section. Research is effective with the past knowledge that adhere the present study conducted. The independent variable of this study is the use of ICT, which is measured in terms of e-mailing, media sharing, text messaging, video gaming, social media, phone calling and television viewing [25].

On the other hand, the dependent variable memory function is measured in terms of retrospective functioning, frequency of forgetting, remembering past events, and mnemonics usage. The last part would present the correlation between variables that further discuss the significant studies that would relatively correlate the variables [13].

Use of Information Communication Technology

Almost all aspects of life are greatly affected with technology. In the context of education, which is correctly termed ICT, technology has helped much in improving current education situation. Increasing the quality of learning, the process of learning and easy access to global information was found to be the developments in the field of ICT. It made learning easier and even realistic. In addition, ICT reduces the burden of expensive educational expenses and indirectly creates a new world with loads of information making things from impossible to accessible [9].

However, attempts to measure ICT usage and medias have been widespread yet contain limited research about the tool. A handful of studies have been proven to describe the importance of medias and instruments but were not able to specify the frequency of the usage of it. Nearly all studies talk about computer and general usage which includes the following set of precepts: it must measure self-reported frequency and it must include activities such as televisions, music players and other devices. To measure the specific usage of a student the following indicators namely, e-mailing, media sharing, text messaging, video gaming, social media, phone calling, TV viewing [25].

The internet, the vast global explosion of information, makes living in convenience, meaningful and possible. Social medias have been used for so many reasons. The emergence of social media opens the doors of communication and connection to the other side of the world. Facebook usage is already part of anyone's daily activity it includes the daily time spent and the actual usage of an individual [8], [25].

Similarly, teacher's use of ICT and manipulation ignites the development of student's motivation to studies and learning. The creation of ICT learning environment enhances teacher's skill in teaching and develops the informal learning approach accordingly. The interests, beliefs and relevant others serve as a pathway to participation of ICT minded individuals and even non-ICT minded. ICT investigates the start and development of teacher's ability to share knowledge on students [30].

In addition, usage of smartphones by students aging from 18-30 consistently use smartphones as a way of communication people. Majority of them spend of about 3-5 hours a day using their smartphones accessing the websites Instagram and Facebook. This age gap are the ones most affected in the reliance of smartphones as a new form of communicating. The ability to swiftly send e-mails to some long-distance friend simply accomplishes the goals of

communicating effectively and conveniently [14]. Moreover, phone calling as a habit of an individual processes the brain to be active specially when the usability of the function of the phone is done consistently. Constant communication of calling made through dialing numbers help much in retaining number memory faster. When dialing is used in a routine manner, the number and codes being used would then be memorize for a long term given that the individual still practices the same routine over again. Brain aging cannot affect the ability of the brain to remember numbers that have been dialed before even if how long the first dialing happened. The hindrance of remembering dialed numbers or codes is when the individual stopped doing the activity of phone calling and dialing, thus it means that phone calling has contributed much in developing the ability of the brain to store memories easily given constant usability of the task [34].

Together in the advent of internet, e-mailing has been one of the channels in engaging with corporate transactions and even day-to-day living. E-mailing widely spread as a normal interaction of people from distant places. E-mails are used accordingly to coordinate easier access to teachers with regards to school works. Most of the teachers in universities use e-mails as an instructional tool in correspondence with undergraduate students. Therefore, students now are obliged to create their personal e-mail and communicate learning through digital interface. The relay of pertinent and timely course are done possibly through email [23]. The use of social media has been outspread all over the world. Associating science concepts and promoting knowledge sharing has been exhibited through the use of social media. Through this media, teachers can bridge the knowledge funds of knowledge and information all shared by social media to facilitate the implicit connection of learner's new learning environment. It clearly suggests that usability of social media by the students and teachers foster knowledge sharing in formal learning environments [21].

Memory Function

The crucial role of memory in daily activities has a great effect on our daily lives. Everyday, we always use our cognitive abilities to cope up with the activities that we need to accomplish and be done. Reading, writing and so on are commonly used activities in everyday situation. Improving memory has been a current issue and ways in improving memory have burst in many ways like practicing and other memory exercises. A working memory must be trained to achieve better responses [20]. Working memory is the set of cognitive processes that aims to achieve certain task intended to be retrieved or deposited. In scholastic achievement and educational success, a good functional working memory can readily and easily store instruction even in the face of distraction [4]. Less skilled readers often suffer in coping up with reading comprehension and context analysis. They have impoverished representation of texts in the long-term memory which in turn increases the difficulty of gaining access and interpretations on coherence. Providing these less skilled readers with additional explicit activities and interconnections enhance their text interpretations and representations in memory to maintain coherence. Thus, global inconsistencies with the application of text manipulations may or may not disrupt cognitive function [27].

Additional strategies like associative learning strategies could also help students apply the technique of not forgetting concepts easily. On the case of Casey and James who are special education students, the teacher associates mathematical concepts with the experiences that the

students have interacted with. These two students who have learning and memory difficulties have easily learned the concept which others find the difficulty of it without using the strategy. Similarly, researchers found that applying one specific strategy specially those who works accordingly, could give as often as 100% accuracy if maintained throughout as they also learn other sets of additional strategies [33].

Specifically, memory is a critical component that is prone to cognitive dysfunction and even deficits in verbal memory. Also, it could develop to brain injuries and worst developmental disability. Application of mnemonics in learning and improving verbal memory chains the way of learning process. Mnemonics mechanisms with recalls suggests that training for this process would be more effective if applied to 9-11 year old children [19].

The application of loci (MoL) which is a well-known mnemonic technique that uses visuospatial environment was used for scaffolding memorization of non-spatial information. It was observed that there is a strong relationship between spatial memory of objects and landmarks in the environment and verbal recall strength. The effectiveness of MoL gives an evidence that spatially mediated processes contribute to memory models which emphasize spatial encoding as the primary currency of mnemonic function [24].

In retrospective memory, memories or events in the past are stored, much is acknowledged by how an individual way assess their learning. The Koriat's cue-utilization framework summarizes the three types of inferential cues that influence memory predictions. The cues that were classified are intrinsic, extrinsic and mnemonic. Intrinsic is the property of to-be-learned information while extrinsic pertains to the conditions of the learning environment. Lastly, mnemonic or the subjective property indices of acquisition. Using the Koriat framework, results show that retrospective memory is sensitive to intrinsic information but less to extrinsic about the learning situation [28].

Furthermore, working memory functions well when the task given is at the positive vibe where environmental and psychological factors coincide. It means to say that the outer elements and even physical can latterly affect the focus, attention and process of a working memory. Same thing goes during reading process, an individual may have the convenience of reading all at once given the positive motivation stimulated by surroundings. Interruptions disrupt the learning process which makes an individual go across the problems of gaining actual focus and dispersed attention. With that, going over and over to the process happens at any time since the learned concepts were not encoded because of the distractions outside. Activation of learning when disrupted suggests negative effects and that includes forgetting [11].

As a matter of fact, memory encoding is one of the critical processes of memory function. It is the foundation of cognitive function such as reading, writing, speaking and listening. Memory function has been extensively studied specially in analyzing the cognitive functions of adults using subsequent memory tasks. Studied on adults using memory tasks indicates a relationship of visual and cognitive-control systems remembered against the forgotten words. However, adult results cannot be compared to the level of children. When children are associated with visual representations and visual systems, the memory function reinforces the lexical process. There is a greater activation and reliance of the memory when children are exposed to visual systems. As a result, viewing words and other viewing activities reinforce the involvement of attention and remembering [10].

At the same time, object imagery and pictorial mental images facilitates voluntary and involuntary retrieval of autobiographical events of an individual. Object imagers are far better in remembering personal past events. Individual with high object imagery reports detailed memories which is specific and comprehensive. Visual stimuli reinforce the process of creating pictorial images of objects and produce clear mental images that would be of help in retrieving information from past events. People with high object imagery encodes information faster than low object imagery [31].

Declarative memory is the specific term connected to the common word 'memory', it is somehow the everyday language that people consciously aware because it interprets the event of an individual's life. The structures of our brain specifically the media temporal lobe has a great importance for declarative memory. One of the structures of MTL, the hippocampus is important on producing episodic memories. When a hippocampus is damage troubles in retrieving information and the like is evident. It is then, that remote memories cannot be retrieved anymore by unhealthy individuals suffering from mental damages [5].

The ability to learn and memorize information is an important part of living as a human. It is part of survival; however, there will be times that the memory slows down its function leading to various mental problems. Students need a healthy and functioning brain to make learning go through with no hassles and problems. Exploring the superiority of visual memory and cognitive associative capacity gives birth to techniques that can be useful for learning and cognitive maintenance [3].

Correlation Between Measures

People find solutions on enhancing cognitive/memory function while technology advances as years globally pass by. Recent studies show that usage of electronic training approaches like the usage of information communication technology tools results to significant improvements on memory tasks. However, the limitations of those studies were hindered by methodological limitations such as lack of control group, follow ups and ecologically valid outcomes. Despite these limitations, evidence recommends that computerized training has the potential positive influence on the function of the cognitive memory of an individual [17].

In addition, the advent of Information Communication Technology and computer games have been widely known in the advances of virtual interaction and self-manipulation. It encourages students 'learning to learn' which is the underpinning mechanistic aspect of video games. 'Learning to learn' is the goal of memory enhancement of which Information Communication Technology was able to deliver. Advantages of the usage of these Information Communication Technology tools have been found to enrich memory perception, attention, and cognitive functions. Thus, ICT improves memory performance on a variety of tasks [16]. Consequently, the utilization of digital tool and devices has a purpose of effectively strengthening the memory function of students. The success of Information Communication Technology has improved in achieving better cognitive performance or academic success [6].

Similarly, various kinds of instructions constitute components from the existing trends in education. Enhancement of the performance of cognition/memory is the central concern of the technological process in terms of instruction delivery. Video-recorded instructions are widespread and is commonly used by teachers at the present. Studies have shown that students

learn effectively when they are stimulated through their senses. The effects of incorporating Information Communication Technology which is video recorded instructions for brief quizzes and activities reveal a positive relationship on memory function. Information Communication Technology decreases mind wandering, increases note taking and cognition, boosts learning, improves the calibration of actual performance and abilities of the memory to retain information. Video-recorded instructions stimulate the cognition of the memory which works as a drive or motivation of the child to focus and achieve attention during studies which also prevents the emergence of memory dysfunction [26].

Theoretical Framework

This study is anchored on the study of Granito and Chernobilsky [15], the effect of technology on knowledge retention. In a traditional setting, students find it difficult to cope with the curriculum specially when it includes retaining the necessary information. The use of Information Communication Technology in the classroom gives a chance to explore the world beyond paper-based methods which also brings an influence on memory function. From the traditional setting to an innovation of delivering instructions to the students that give meaningful and even context-based experience. The more the student experience a specific situation the greater the chance of improving memory. ICT brings the action of seeing the impossible through internet.

As supported on the study of Drigas, Kokkalia and Lytras [7], ICT plays a significant role in both ensuring and improving memory skills. Memory problems can be assisted with technology to bridge the gap between learning acquisition and memory lags. Children find ICT as a tool to improve performance and lesson memory difficulties. ICT can be a tool to foster knowledge and empower real life experiences that can make the mind retain the information effectively. The effectiveness of this tool results to an increase in memory performance of a child in terms of storing and retrieving information throughout the day.

The independent variable which is the Use of ICT has been anchored to the study of Rosen, Whaling, Carrier and Cheever [25]. The study has stated that measuring media and usage of technology most of the time involves monitoring the activities done by a student by number of hours and minutes. The frequency of various computer and other media activities spent. In addition, usage of ICT has been part of the daily lives of the student since then. It gives them strong reliabilities and relationships between learning and manipulation. Furthermore, the study suggests that usage of ICT can be determined through a solid mixture of old and new technologies, device-based assessments, device-free assessments, trends, and social networking. The measure of usage includes the following subscales e-mailing, media sharing, text messaging, video gaming, social media Facebook has been used on the study, but the word "social media" could also be referred to another specific site, as a suggestion of this study), phone calling and television viewing.

The dependent variable which is the Memory Function has been anchored to the theory of Zelinski, Geliwski, and Schaie [13]. The test about memory functioning depicts the everyday activities done by a person. How the memory functions effectively also predict the success of overcoming the potentials of forgetting. Memory functioning includes retrospective functioning, how a person remember a past event, and mnemonics usage. Everyday a memory functions accordingly but at some point, memory is prone to different problems.

3. Method

Research Design

This study used a quantitative non-experimental research design utilizing causal effect technique. Pertinent data were gathered through modified questionnaires as the main data-gathering tools. Assessment focused on describing the level of the use of ICT in enhancing memory function of the 2nd year college students.Quantitative research is being referred as the collection of data through determining the relationship of variables within a population. It focuses on numeric and unchanging data gathered in a structured manner [1]. Likewise, cause-effect method was utilized to determine the relationship between the use of ICT on the memory function of the 2nd year college students. Moreover, the main purpose of this study is to determine the domains of the use of ICT that significantly influences the memory function of the 2nd year college students.

Research Locale

The findings of the study were specific to the context of the 2nd year college students. The possibility for the general applicability of the findings were limited by scope, and the sample. Accordingly, even though there would be common features, the findings may not have general applicability to other systems. College A is located at Mabini St., Tagum City, Davao del Norte. It offers several courses with its location Tagum City in Davao del Norte. On the otherhand, College B was also part of the study that is in Panabo City, Davao del Norte. College B is one of the branches that continues to offer quality education. Even if this is a small college in terms of enrollees and population, still this function as one of the efficient branches offering numerous courses.

Population and Sample

The respondents of the study with the inclusion criteria, were the 2nd year college students, in any course, enrolled at university branches specifically in College A in Tagum City and College B in Panabo City, Davao del Norte school year 2019-2020. The respondents were chosen based on random sampling technique. For the exclusion criteria, students who were not enrolled as 2nd year college student on any course either College A or College B would not be a part of this study. These students have diverse experiences and level of memory abilities. The study was conducted in January 2020. Random sampling was used in the selection of the respondents. The random sampling technique defines that each member of the population presumably had an equal chance of being nominated.

The researcher has observed and apply the full ethical standards in the conduct of the study following the study protocol assessments and standardized criteria. The study observed the following inclusion and exclusion criteria: date, exposure of interest, geographic location of study, language, participants, peer review, reported outcomes, setting, study design and type of publication. The respondents were not threatened during the conduct of the study and can withdraw anytime if they feel threatened.

Research Instrument

The researcher used two sets of adapted and modified questionnaires in gathering the data, which was validated by the panel of experts, it was pilot tested and was treated with Cronbach

Alpha to test the reliability. The first set was used to the level of independent variable, which was e-mailing, media sharing, text messaging, video gaming, social media, phone calling, television viewing [25].

The second set of adapted and modified questionnaire was used to determine the level of memory function in terms of retrospective functioning, remembering past events, and mnemonics usage [13].

Remarkably, the instrument that was used in the study was subjected to dry run in order to determine the Cronbach Alpha values before content validation by experts and the results for independent. In addition, both questionnaires underwent content validation by panel of experts with an internal validation for the use of information communication technology Cronbach alpha 0.906 and mean inter-item correlation of 0.222 with an overall internal consistency of very good. For the memory function, it obtained an internal validation Cronbach alpha of 0.830 and mean inter-item correlation of 0.262 with an overall consistency of good.

Statistical Tools

Mean. This was used in determining the level of the use of ICT and the level of the memory function of the 2nd year college students.

Pearson-r. This was utilized to find out the significant relationship between the level of the use of ICT and the level of memory function of 2nd year college students and will be tested at 0.05 level of significance.

Regression Analysis. This was used to determine which domain of the use of ICT best influence the memory function of the 2nd year college students.

4. Results and Discussions

Discussed comprehensively in this chapter are the results obtained from the data gathered from various locale. This contains the statistics on the variables presented that is used based on the four indicators on the level of use of information communication technology and memory function: the relationships between the key variables of interest, and finally, the regression analysis of controlling for the effect of the other predictor variable. Preliminary analyses were conducted to investigate the extent of the response of the students and the differences in all the items of each indicator used in the study.

It has been noted that the standard deviations range from 0.50 to 0.51 which is less than the typical standard deviation for a 5-point Likert scale. As presented on this study the standard deviation was very low which means that the statistical values are close to the mean of the data set. Likert scale was used to determine the analysis of this study [34].

Table A. Level of the Use of Information Communication Technology

Indicators	Mean	SD	Descriptive Equivalent
E-mailing	3.64	0.87	High
Media Sharing	4.01	0.79	High
Text Messaging	4.53	0.57	Very High
Video gaming	3.32	1.04	High

Social Media	4.23	0.67	Very high
Phone Calling	4.20	0.76	Very High
Television Viewing	4.13	0.81	High
Overall	4.01	0.50	High

Table A presents the summary on the use of information communication technology of 2nd year college students in terms of emailing, media sharing, text messaging, video gaming, social media, phone calling and TV viewing. The overall mean is 4.01 with a standard deviation of 0.50, described as high. This means that the usage of information communication technology of 2nd year college students is much evident.

Table B. Level of Memory Function

Indicators	Mean	SD	Descriptive Equivalent
Retrospective Function	4.21	0.70	Very High
Remembering Past Events	3.93	0.60	High
Mnemonics Usage	3.82	0.68	Moderate
Overall	3.99	0.51	High

Presented in Table B are the means and standard deviations of each variable included in the analyses to examine the level of memory function of 2nd year college students and the differences of each indicator reflected in the study. The overall mean on the level of memory function is 3.99 with a standard deviation of 0.51 which is described as high. This connotes that memory function is much evident.

Among the three indicators on memory function, Retrospective Function exhibited the highest mean of 4.21 which means very high followed by Remembering Past Events Scale with a mean of 3.93 which means high and Mnemonics Usage with a mean of 3.82 which is being described as moderate.

Table C. Significance of Relationship between ICT and Memory Function

Independent Variable	Mean	SD	Dependent Variable	Mean	SD	r-value	r-squared	P-value	Decision
E-mailing	3.64	0.87				0.278	0.773	0.001	Ho Rejected
Media Sharing	4.01	0.79	Memory Function	3.99	0.51	0.302	0.0912	0.001	Ho Rejected
Text Messaging	4.53	0.57				0.335	0.1122	0.001	Ho Rejected
Video Gaming	3.32	1.04				0.192	0.0369	0.001	Ho Rejected
Social Media	4.23	0.67				0.312	0.0973	0.001	Ho Rejected
Phone Calling	4.20	0.76				0.425	0.1806	0.001	Ho Rejected
Television Viewing	4.13	0.81				0.340	0.1156	0.001	Ho Rejected

*p < 0.05

Table C highlights the significant relationship between use of information communication technology and memory function of 2nd year college students. Usage of ICT is the independent

variable with seven (7) indicators. First is the E-mailing with mean of 3.64 and standard deviation of 0.87. Computation showed that the null hypothesis is rejected at α=0.05 as level of significance is greater than the probability level of 0.001 with r-value of 0.278. The second indicator, Media Sharing obtained a mean of 4.01 with a standard deviation of 0.79. Computation showed that the null hypothesis is rejected α=0.05 as level of significance is higher than the probability level of 0.001 with r-value of 0.302. The third indicator, Text Messaging has a mean of 4.53 with a standard deviation of 0.57. Computation showed that the null hypothesis is rejected at α=0.05 as level of significance is greater than the probability level of 0.001 with r-value of 0.335. The fourth indicator, Video Gaming has a mean of 3.32 with a standard deviation of 1.04. Computation showed that the null hypothesis is rejected α=0.05 as level of significance is greater than the probability level of 0.001 with r-value of 0.192. The fifth indicator, Social Media obtained a mean of 4.23 with a standard deviation of 0.67. Computation showed that the null hypothesis is rejected α=0.05 as level of significance is higher than the probability level of 0.001 with r-value of 0.312. The sixth indicator, Phone Calling got a mean 4.20 with a standard deviation of 0.76. Computation showed that the null hypothesis is rejected α=0.05 as level of significance is greater than the probability level of 0.001 with r-value of 0.425. The seventh and last indicator, Television Viewing attained a mean of 4.13 with a standard deviation of 0.81. Computation showed that the null hypothesis is rejected α=0.05 as level of significance is greater than the probability level of 0.001 with r-value of 0.340.

Therefore, the finding implies that there is a significant relationship between the use of information communication technology and memory function of 2nd year college students.

Table D. Regression Analysis of the Influence on the Use of ICT on Memory Function

Presented on Table D is the regression analysis of the influence on the use of information communication technology on memory function of 2nd year college students. In terms of e-mailing, data show that at α=0.05 level of significance is greater than the beta-value of 0.135 with a corresponding probability of 0.009, thus the null hypothesis is rejected. This means that the use of ICT in terms of e-mailing significantly influences the memory function of 2nd year college students.

In terms of media sharing, data show that at α=0.05 level of significance is lower than the beta-value of 0.086 with a corresponding probability of 0.149, thus the null hypothesis is not rejected. This means that the usage of ICT in terms of media sharing does not significantly influences the memory function of 2nd year college students. In terms of text messaging, data show that at α=0.05 level of significance is lower than the beta-value 0.097 with a corresponding probability of 0.099, thus the null hypothesis is not rejected. This means that the usage of ICT in terms of text messaging does not significantly influences the memory function of the 2nd year college students.

In terms of video gaming, data show that at α=0.05 level of significance is lower than the beta-value 0.046 with a corresponding probability of 0.390, thus the null hypothesis is not rejected. This means that the usage of ICT in terms of video gaming does not significantly influences the memory function of the 2nd year college students. In terms of social media, data show that at α=0.05 level of significance is lower than the beta-value of 0.030 with a corresponding probability of 0.611, thus the null hypothesis is not rejected. This means that the usage of ICT

in terms of video gaming does not significantly influences the memory function of the 2nd year college students. In terms of phone calling, data show that at α=0.05 level of significance is greater than the beta-value of 0.246 with corresponding probability of 0.001, thus the null hypothesis is rejected. This means that the usage of ICT in terms of phone calling significantly influences the memory function of the 2nd year college students.

Lastly in terms of television viewing, data show that the level of significance α=0.05 is lower than the beta-value of 0.092 with a corresponding probability of 0.117 which makes the null hypothesis not rejected. This means that the usage of ICT in terms of television viewing does not significantly influence the memory function of the 2nd year college students. This indicates that e-mailing and phone calling can be considered as good indicators of the usage of ICT to influence the memory function of the 2nd year college students. On the otherhand, social media is not considered to be a good indicator to influence memory function since as the students use social media, the more memory function is lessened.

5. Conclusions

Based on the result of the study, the following conclusions were formulated from the findings of this study. The level of the use of information communication technology of the 2nd year college students in terms of e-mailing, media sharing, text messaging, video gaming, social media, phone calling and television viewing had a description of high or much evident on the students. The level of memory function of the 2nd year college students in terms of retrospective function, remembering past events and mnemonics usage was also high which means it is much evident on the students.

In addition, it is also noted that the use of information communication technology of the 2nd year college students in terms of e-mailing, media sharing, text messaging, video gaming, social media, phone calling and television viewing has a significant relationship on the memory function in terms of retrospective functioning, remembering past events and mnemonics usage. Finally, the use of information communication technology as independent variable in terms of e-mailing and phone calling were good factors that influence the dependent variable memory function.

Independent variable	Unstandardized Coefficients		Standardized Coefficients	t-value	P - Value	Decision
	B	Standard Error	Beta			
(Constant)	1.958	0.223				
E-mailing	0.080	0.031	0.135*	2.623	0.009	Ho Rejected
Media Sharing	0.056	0.038	0.086	1.446	0.149	Ho Not rejected
Text Messaging	0.088	0.053	0.097	1.655	0.099	Ho Not rejected
Video Gaming	0.023	0.026	0.046	0.861	0.390	Ho Not rejected
Social Media	0.023	0.045	0.030	0.509	0.611	Ho Not rejected
Phone Calling	0.167	0.043	0.246*	3.860	0.001	Ho Rejected
Television Viewing	0.059	0.038	0.092	1.571	0.117	Ho Not rejected

Dependent Variable: Memory Function

R= 0.500 **R Square:** 0.250 **F-ratio:** 16.0 **P-value:** 0.001

6. Recommendations

The empirical evidence discussed in this study used to support the recommendation to sustain the usability of information communication technology and the memory function of the students. This study would be of worthy to the concerned beneficiaries specially the students, teachers, school administrators and the Commission on Higher Education (CHED). This may also give a better idea on how to improve the memory function of the students by incorporating the usage of ICT tools and devices.

First, playing games on a computer or smartphone with other people online should be used as an intervention for the academic enhancement of memory skills. Teachers should incorporate the use of interactive games that allow stimulation and interaction between the computer and the student. The combination of all senses involved in learning makes a positive impact in improving the memory function, making the experience memorable and enjoyable.

Second, application of abbreviations, associating things and techniques in memorization should be practiced more to hasten the ability of the memory to function effectively and better. Also, keeping an appointment book for writing reminders and list of things to be done would also be helpful. Mnemonics in addition, simplifies information to be learned while consistently practicing it as an exercise to associate new experiences.

Third, the use of Information Communication Technology should be considered as a tool to improve the memory function of an individual. It is recommended to practiced and consistently use digital tools to strengthen the ability of the memory to be productive and function effectively which is applicable during learning activities. Context-based activities through usage of Information Communication Technology help stimulate senses, creates motivation, and increase cognition.

Fourth, usage of e-mailing as a predictor that best influence on the memory function should be sustained and strengthened to maintain the memory performance of an individual. Utilization of e-mail as a way of communication is encouraged to improve the memory of an individual given that the practice of doing is with care and supervised by a knowledgeable adult like the teacher. The use of e-mail with the internet would be a good opportunity in building digital classrooms for the 21st century.

Lastly, the researcher may recommend taking precautions on usage of information communication technology devices specially when it is connected to the internet. Though social interactions are prevalent on the usage of ICT, they somehow affect the memory both positively and negatively as reflected on the study of Baek [2]. Further research using other dimensions not mentioned on this study or qualitative studies on themes and issues which can contribute to the use of information communication technology on memory function is highly recommended.

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