



# Integration of Information and Communication Technology (ICT) in the Teaching Methodologies of the Selected Faculty Members of MSU Main Campus

**Hosnie Macalangcom Gogo**

Public Administration Department, College of Public Affairs, Mindanao State University, Marawi City, Philippines

**Email address:**

Hosniegogo98@gmail.com

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**Abstract:** This research undertaking aimed to investigate contributions of Information and Communication Technology (ICT) integration in the Teaching Performance among the selected colleges as perceived by the faculty of Mindanao State University, Marawi City. This study is anchored on the Triple-E Framework of Liz Kolb which is a practical tool that measures the degree to which the technology in a lesson is helping students meet the learning goals. Faculty respondents were also asked on the effects of ICT integration in the classroom based on the Dimensions of Triple-E Framework. Significant insights were also gained from the perceptions and responses from students regarding their exposure to ICT tools as part of their learning process. The data from the survey yielded the diverse rankings of ICT tools that were integrated in their teaching methodologies. With a diverse frequency, they utilized technology in organizing text, images, audios, and videos through power point presentations in order to facilitate effective and efficient lecture and discussion for classroom interaction and enhancement. The data obtained from the survey identified the “Intermediate” Level of Literacy of the Integration of Information and Communication Technology (ICT) tools. Among the ranking of tools that they commonly utilized were: Personal Computer, Laptop, Printer, DLP Projector, Smartphones, Television Monitor while the most useful software were the Microsoft Office, Audios, Videos, Multimedia Players, Online Applications and resources as well as the Internet. Their knowledge and skills in ICT use determined their evaluation of the role of technology in achieving the learning objectives they aimed for the students which resulted among exceptional, strong and average connection. This study made an implication that the collaboration of technology and the faculty inputs would help maximize and attain the learning objectives that could facilitate authentic development to the learners.

**Keywords:** Integration, Information and Communication Technology, Teaching Methodology

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## 1. Introduction

Information and communication technology (ICT) embedded education and the entire humanity as more and more gadget is being introduced for used of mankind [15]. Pedagogues and strategies in education to facilitate learning-teaching process are unfolding and teachers should accommodate the fast changing paced transformation brought about by information and communication technology otherwise they will be left behind [10]. In other words, teacher in the 21st century era must try to go with the new characteristics of the educator if they want a space in the arena of the professional world.

It is once said that: Information and Communication Technology (ICT) unlocks the door to education while education unlocks the door to development [8]. Therefore, Information and communication technology (ICT) has become, within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering its basic skills and concepts of as part of the core of education [4].

In the effective implementation of the curriculum, Information and Communication Technology (ICT) indubitably plays a vital role [1]. The modern way of life of Filipinos in these times is so much dependent on technological advances. ICT is fast transforming economies,

social processes, and the education sector. Thus, the government is seriously committed to integrate ICT in education by mounting series of initiatives which are aligned to the Sustainable Development Goals (SDGs) and Education for all global thrust [14].

In this study, emphasis is given to the selected faculty members of Mindanao State University-Marawi City. Hence, this study determined the contribution of Information and Communication Technology (ICT) Integration on the teachers' methodologies among the selected colleges as perceived by the faculty of Mindanao State University, Marawi City.

## 2. Materials and Methods

### 2.1. Research Design

This study made use of cross-sectional survey using qualitative-descriptive approach in the interpretation of data. The study described characteristics that exist among students in terms of their responses regarding ICT exposure and its contribution to the quality of teaching among the selected colleges as perceived by the faculty of Mindanao State University. Analyses of the gathered data were categorized into the contributions of ICT and to draw the ICT support facilities in MSU and its interventions for the faculty.

### 2.2. Respondents of the Study

The study was conducted among the top three (3) colleges in terms of student population in the academic year 2018-2019, namely: College of Public Affairs (CPA) which has a total of One Thousand Twenty Eight (1028) student population, College of Agriculture (COA) which has a total of Nine Hundred Ninety Seven (997) student population; and College of Business Administration and Accountancy (CBAA) which has a total of Eight Hundred Seventy Six (876) student population.

The sixteen (16) identified faculty respondents identified Thirty-Two (32) subjects and sections that involved a total of Four Hundred Eighty Five (485) officially enrolled students who were given the survey questionnaire and participated in the conduct of Focus Group Discussion (FGD) and series of interviews.

## 3. Data Presentation, Analysis and Interpretation of Findings

### 3.1. Information and Communication Technology (ICT) Tools Integrated into the Teaching Methods of the Faculty

Part 1 shows the ranking of ICT tools that were integrated in their teaching methodologies. With a frequency of One Hundred Four (104), Laptop was of the highest ranking (1) in usage in terms of integrating in the teaching methodologies. This means that the faculties are engaged in dealing with their teaching methodologies with the aid of Laptop specially

in preparing their lessons and activities inside the class. Second in ranking (2) with a frequency of One Hundred One (101) is the use of 'Internet and the 'Microsoft Office (Word, Excel, Publisher and Power Point); the access to the rich and diverse materials and information that the Internet can provide help shape the information that can be applied and instructed to the students.

In addition, Villanueva A. [11] concluded that knowledge in ICT tools is a determination in achieving the learning objectives they aimed for the students which resulted between exceptional and strong connection. This implied the strong relevance of utilizing technology and the internet in helping their students maximize the achievement of their learning goals.

### 3.2. Level of Literacy of the Integration of Information and Communication Technology (ICT) Tools

Part 2 shows the frequency distribution, percentage, total number of responses, weighted mean and the verbal interpretation of the respondents' responses based on their Level of Literacy of the Integration of Information and Communication Technology (ICT) tools. They were asked to categorize their responses as 'Basic', 'Intermediate' and, 'Advance'. with a weighted mean (from the order of highest to lowest) of 2.08 (Intermediate), Microsoft office came first in terms of the literacy of usage; this means that the respondents were commonly using the ICT software and lead to their proper orientation on the common use of the said tool. It was followed by the following ICT tools with its corresponding weighted means which fall on the "Intermediate" level of literacy, respectively: Android Phone (1.98), Internet (1.96), Television Monitor (1.95), Laptop (1.95), Digital Still Cameras (1.88), Personal Computer (1.85), Printer (1.83), Multimedia (1.79), Digital Light Processing (DLP)/Projector (1.77), and scanner (1.76). These ICT tools were commonly used by the respondents that might lead to their 'Intermediate' level of literacy.

This is consistent to the survey conducted by the Department of Science and Technology (DOST) where they identified that few teachers had fear of the technology and had closed mindset and nonappreciation of ICT education; and lack of resources and availability that lead to lack of fundamental knowledge on its application [6].

### 3.3. Ways to Use Information and Communication Technology (ICT) Tools in the Classroom

Part 3 shows the order in which the faculty respondents uses ICT tools in different ways. The sixteen (16) items list reveals the degree with which the task were done from the most frequent to the least frequent one. Eighty-Nine (89) or 86% of the respondents uses ICT tools in their teaching methodologies on the following ways such as 'the production of text using a word processing programs' [Item 1]; 'Use E-mails to communicate with others' [Item 2]; and 'Organize computer files in folders and subfolders [Item 7].

The ICT tools that were ranked according to their

frequency of usage clearly indicated relevance in improving and transforming the quality of instruction that faculty of the selected colleges were imparting among their learners.

The data show the relevance and importance of ICT technologies for the tertiary faculty. Through authoring, educators are able to tailor software programs either by inserting new texts or by modifying the activities. Authoring runs on a spectrum from set programs which allow slight modification (e.g., inclusion of new texts) to complex authoring systems [5]. Authoring systems allow educators to design their own multimedia courseware. These can take a lot of time and effort to master, and are most often used by true enthusiasts [7]. Utilizing ICT significantly contributed to the acquisition and absorption of knowledge among the students by increasing their motivation and engagement in classroom activities. Particularly, a computer with internet connectivity provides the learner an opportunity to connect with other people and provides them ready access to data.

### ***3.4. Effect of ICT Integration in the Classroom Using the Triple-E Framework***

The One Hundred Four (104) total faculty respondents also made an evaluation on the effects and usefulness of ICT tools using the Triple-E Evaluation Rubric. As reflected Eighty (80) of them or 76.9% declares an exceptional connection of Information and Communication Technology in achieving the learning goals they have set for their classes. Twenty-One (21) or 20.2% substantiated the strong connection of using ICT in their teaching methodologies while the remaining Three (3) or 2.9% discloses an average use of the ICT tools.

This means that majority of the respondents acknowledge the importance and benefits of integrating ICT tools in the teaching methodologies in order to efficiently and effectively execute the learning goals among their subject instruction. One of the respondents declares how the students enjoyed multimedia and audio visual presentation much more they would enjoy in the class because it was something new to them. She also added that in order for the university to realize its vision to be in international status, the university officials must initiate an effort to provide ICT facilities for the realization of that vision as it plays an important role in achieving the university vision through the provision of these facilities.

### ***3.5. Student Responses in the Integration of ICT in Class***

The summary of responses that were gathered from the students during the Focus Group Discussion (FGD) and series of Interviews conducted by the researcher. Data gathered were classified between positive and negative feedback and categorized based on the Three (3) dimensions of Triple-E Framework Technology Evaluation. This also includes the realizations and remarks of the students that contributed to the provision of recommendations.

For the dimension of "Enhancement", they perceived ICT tools as helpful in improving and enhancing their knowledge through the skills that can be enhanced with the help of the ICT

tools [9]. It enhanced their understanding in the class since it reinforces supplementary lectures. They shared that it was easier for them to understand when they used videos and audios that they can easily understand. It also enhances their communication skills through the help of software dictionaries as they learned various language variations. They also imparted that they can be effective in their chosen courses with the help of ICT as it provides understanding and horizon to reflect on the society to where they are not yet familiar. It also gives them an idea on the real-world society by the introduction made possible with the help of ICT facility in the form of video and audio presentation.

For the "Extension" of their learning, they considered the reality of lectures and reflect on the real-world setting. It can help them secure their future with the advance information that may be accessed through the internet, one shared that with technology, they have more exposure and exploration of the world unlike when using the traditional way of teaching (e.g. Manila Papers) where the listeners get bored. The teaching methodologies become more participative and reflective through the video and audio presentation [2]. They also shared that then can become an effective public speaker with the advance ICT technology like the audio recording. Some also shared that they can no longer be ignorant to the other countries since access to the information from those countries are easier with the help of Internet. Generally, they believed that with the advent of ICT tools in the teaching methodologies of their instructors and professors, learning can be more relevant and reflective to the society.

### ***3.6. Generated ICT Support Facilities/Interventions for the MSU Faculty***

The responses from the study provided perspective on the support facilities on Information and Communication Technology (ICT) needed by the faculty and the relevant and the possible interventions that the university could assist for the effective and efficient teaching methodologies of their faculty force. This prompts the faculty respondents to evaluate and reflect the means in which he/she can maximize learning for students so that they are able to achieve the learning goals and skills that are significant in preparing them to the workforce for the future success of each individuals that will lead to organizational development [12]. Hence, from the findings of this study justifies the ICT support Facilities needed by the faculty and the possible interventions and assistance that the university could provide for them to be efficient and effective in their teaching methodologies.

First, is budget allocation for the provision of Information and Communication Technology (ICT) Facilities and its facility development in each colleges. ICT is not a replacement in the absence of Teacher but a supplement for the efficient and effective installment of knowledge to the students through the help of ICT tools. It is also declared in the policy of the state to work towards the advancement of the quality of education in the country through the adoption of Information and Communication Technology (ICT) as a

tool in the teaching and learning process to enable students to achieve students to achieve higher standards of learning. Likewise, the state shall also utilize ICT education in the development of its human resources.

Second, is the Advance training of faculty member on the use of Information and Communication Technology (ICT) tools with proper management of its usage for a holistic learning. Technology may enhance learning but without the teacher's proper administration and guidance on its usage, learners may be opted to learn varied information and sometimes unreliable information from the internet that do not necessarily develop guided and organized hierarchy of learning. As mentioned by Villanueva A. [11], it must be emphasized that ICT tools do not only provide models for instruction but should be valued based on their capacity to elevate learning acquisition through engaging students for interaction, enhancing learning beyond the teacher's input, and extending learning so that students acquire life skills that are beneficial in their personality development and future career [13].

Utilizing technology in this context would most likely transform students to become critical thinkers who are adept at socializing and interacting with others [13]. Apparently, as reflected in the findings of the study, the over-all weighted mean gathered show a majority responses of "Intermediate" level of literacy which needs to be level up in order for the faculty to be more effective and engaging in the calling noble profession. With these, training for the advance knowledge of ICT is yet but necessary.

## 4. Conclusion

The study was conducted among the top three (3) most populated colleges of the Mindanao State University-Marawi City in terms of student population during the Second Semester of Academic Year 2018-2019, to wit: College of Public Affairs, College of Agriculture and College of Business Administration and Accountancy; in which all faculty members of the selected colleges were selected as respondents of the study with an exception of those who are in their Study Leave, Sabbatical Leave, Maternity Leave, Sick Leave and those who have an administrative designation in a far-flung area who can hardly be accessed.

Triple-E Framework was utilized in this study. This tool provides rubrics and assessment tool that evaluated the efficiency of ICT use in the achievement of the learning goals. Through this, it can help identify the ICT support facilities and interventions needed by the faculty-educators in dealing with the noble calling of teaching effectively and efficiently.

## 5. Recommendations

Based on the findings and implications of this study, the following recommendations were drawn:

First, since this study found out the immense role of Information and Communication Technology (ICT) in the providing quality of graduates to man the organizational development in their chosen profession and/or organization

in the future career, it is highly recommended for all the tertiary faculty force, especially those who did not integrate ICT into their teaching methodologies, to utilize ICT facilities through equipping their knowledge and skills on the use of ICT tools;

Second, since it unveiled in the study that majority of the faculty respondents has an "Intermediate" level of literacy on the use of ICT tools, it is highly recommended that the faculty members specially of those in their thirty (30) years in service onward should undergo advance trainings and engagement on the ICT-related development programs to be more effective in their teaching methodologies. With this, it would help maximize and attain the learning objectives that could facilitate authentic development to the learners;

Third, since it found out that faculty members have limited ideologies on the ways to integrate ICT tools in their teaching methodologies, it is highly recommended for all the faculty members to widen their perspective and dimension on the diversity of the use of ICT tools that can contribute to the acquisition and absorption of knowledge among the students by increasing their motivation and engagement in classroom activities.

Fourth, since the faculty respondents acknowledge the importance effects of integrating ICT tools in the teaching methodologies in order to efficiently and effectively execute the learning goals among their subject instruction, it is highly recommended that the university officials must initiate an effort to provide ICT facilities, interventions and development programs for ICT to supplement the noble vision of the university to be in international status. Specifically, officials must make internet or wi-fi as mass medium, making it accessible to all both rich and poor; Indeed, ICT plays an important role in achieving the university visions through the provision of these facilities;

Fifth, since the students disclosed their realization on the importance of ICT in the attainment of learning objectives being left behind to the other universities, University and college officials must invest in ICT facilities for the teaching methodologies of their faculty for the students to be diverse and competitive making them in an international standard;

Lastly, as practitioner of Public Administration and since Development is one of the aims of the noble profession, it is highly recommended for all the faculty members who are aiming holistic development to their learners, faculty members must be well-versed and equipped with the knowledge of ICT tools for them to incorporate in their teaching methodologies as the researcher truly believes that ICT unlocks the door to education and education unlocks the door to development.

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