

OPEN ACCESS

Manuscript ID:
MGT-2023-11016370

Volume: 11

Issue: 1

Month: July

Year: 2023

P-ISSN: 2321-4643

E-ISSN: 2581-9402

Received: 10.04.2023

Accepted: 15.06.2023

Published: 01.07.2023

Citation:

Mary, A. Fatima, and
K. Sethupathy. "Attitude and
Perception of Teaching and
Learning Process through
ICT: A Case Study of DMI-St.
Eugene University, Zambia."
*Shanlax International Journal
of Management*, vol. 11,
no. 1, 2023, pp. 1–10.

DOI:

[https://doi.org/10.34293/
management.v11i1.6370](https://doi.org/10.34293/management.v11i1.6370)



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Attitude and Perception of Teaching and Learning Process through ICT: A Case Study of DMI-St. Eugene University, Zambia

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Abstract

This study aims to discuss the efficacy of teaching and learning process through Information and Communication Technology, taken to practice. Teachers always play an essential role of creating a successful environment for the implementation of digital media teaching at the educational institutions. In fact, the efficacy of such a teaching methodology is of prime importance in this modernity. The specialization of the paper is to bring an awareness on the prospects of a viable virtual platform that can be taken to practice as a modern means of teaching to the audience. None the less, in terms to the educational system existing in Zambia, this is the foremost practical teaching method introduced by DMI to sustain enhanced learning possibilities to students from all corners of the nation of Zambia. The efforts being taken to enhance teaching and thereby learning of students is by the successful implementation of a digital media at the DMI-St. Eugene University. Precisely, to be authentic to the expression of this study, the university has well-equipped digital tools to make learning and teaching an easy access. The size of the sample consists of 42 teaching staff of the affiliated college of the DMI-St Eugene University. For collecting the data, the researcher used stratified random sampling and survey method along with Questionnaires and interview method. The findings of the study determine the fact that the staffs have adequate knowledge of digital media and they are equipped with the required tools for teaching. The variables taken are conducive to the concept of application in respect to ICT related practices in the institution.

Keywords: Affiliated, Application, Efficacy, Enhance, Implementation, Methodology, Modernity, Stratified.

Introduction

Background of the Study

The quote, "Information, Communication and Technology (ICT) is the type of technology employed in the shape of tools, equipment and application support, that helps in the collection, storage, retrieval, use, transmission, manipulation and dissemination of information as accurately and effectively as possible." taken from the article 'Importance of ICT in Education and Teaching-Learning Process' by M.Chatterjee is taken to establish the background of this study. It is synonymous to the intention of this article as the significance and importance of ICT-related teaching and learning is sure to develop strategies and methodologies to improve the quality of education. It is major concern is to initiate staff to become digitalized.

The back ground of this study relates with the efficiency and efficacy of a staff to handle the lesson through the media of ICT. It is a compatible implementation of imparting lessons to the students in an effective manner.

Modernizing of the teaching-learning atmosphere adds to the grandness of the institution that enhances growth prospects of the organization. Furthermore, being in Zambia, the digitalization of learning processes is sure to make a significant contribution to the field of education. A referential study on this topic reflects on many benefits in the use of ICT based curriculum, strategies and plan of work more satisfactory and integrated.

“ICT is the most effective way to boost the students’ knowledge and the role of ICT in the education sectors becoming more important and this importance will continue to grow and develop in the 21st century..” is a relevant thought taken from a journal paper titled ‘Importance of ICT: Teaching and Learning Enrichment’ by Jyoti Devi. It deliberates the thought that a staff of an institution adapting to the new pattern of digital teaching is sure to become more capable and precise to the lessons taught. No doubt, this scenario will increase the quality of teaching to a larger extend and provide latest information of the content to be taught using ICT. Multi-faceted approach is taken to concern by the faculty members who are the most important avenues of expertise for institutions that offers higher learning potentials to the students.

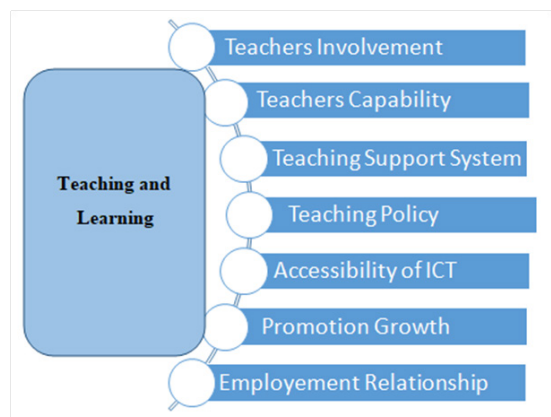
The back ground also brings forth the issue of ICT agreeable and amiable environment in the campus. The staff and the students get adapted to such a cross-over of ideologies and concepts that make them travel at a faster pace of communication. The management of the institution believes in introducing appropriate tools, gadgets and amenities of electronic media to sustain growth through ICT. Enhanced teaching attracts students to develop effective learning skills, imbibing quality education for each of them. This is a step forward towards globalization as seen in many parts of the world. The macrocosm has become a smaller place due to advances in ICT that predicts synchronized teaching and learning at the same time.

These changes increased concern for countries not only to be more adaptive to the changes but also design and develop innovative tools, equipment, processes, systems, structures, policies, and resources to remain compatible with the changing world. Furthermore, the advancement accepted by

an educational institution has paved a way of making learning compatible by establishing digital systems, equipment, network processes and stable structures in the campus. Professional development of the staff is the main criteria of such an approach and thereby, creates a standard of par excellence with the changing world.

Conceptual Framework of the Study

A conceptual framework is a pattern of schematic presentations that depict the linkage between the different variables taken to study and the emphasis given in establishing the norms as expected out of the study taken for a research analysis. It is designed by the researcher to bring forth the relationship amongst the elements taken for discussion. Conceptual framework helps to move in the proper direction to achieve the target of the study and to initiate the educational derivatives that intends to work with ICT. The component identities would be the user of ICT and the end-user who is gaining knowledge through ICT. Moreover, the conceptual framework will cover the scheduled working processes in terms with plan of work-implementation, reasoning-interventions for effective functioning, knowledge acquisition-transference and cost effectiveness in bringing the concern into practical application. Pedagogy and the pedagogue make the broader outline of the conceptual framework.



Problem Statement

Unlike the traditional classroom teaching, ICT has a vast difference in its application and reliability. The recent technology of information and communication has a widespread application and

serves as an easy access to learning. The platform of virtual online expression is sustainable to the modernity as it can play multiple roles to a large number of students at the same time. The challenge of the situation is that, it needs well trained staff that would be able to handle the electronic gadgets at ease and carry forward their communication of the lessons in an organized manner.

Over years of analyzing the impact of ICT, many scholars identified the fact that ICT would be an effective tool of communication. A person with good acquaintance to ICT would be able deliver the specific educational objectives as formulated in an institution. This paper reflects on such an ideology. So ICT remains as one of many available options for supporting teaching and learning processes in any organization. This part of the article will focus on the software applications, networking systems, firewall applications as a security measure along with broadband extensions to make ICT highly applicable. The problem statement will also extract the possibilities that may happen out of the new options put to work. Bringing in the fact, Pelgrum (2001) found that the lack of knowledge and skills, insufficient number of computers, lack of infrastructure and difficulty in integrating ICT based instruction in the classroom are the factors that negatively affect the implementation of ICT by teachers in education. Yet the world walks towards ICT.

Now-a-days, Information and Communication Technologies (ICTs) have gained influence in the global wise development plan and are an essential investment required by all countries to achieve the 2030 Global Agenda of the world scenario. ICTs have been used in many countries especially developed countries to improve quality and access to education, as well as improve productivity for both teachers and pupils.

Innovative ways of introducing online, distance learning mode of imparting education is in vogue at DMI-St. Eugene University. It is done precisely to create an impetus to ICT related teaching-learning in the nation of Zambia. It is a new beginning in country which has taken a full-fledged expansion at DMI-St.Eugene University, Zambia. This reformation in teaching methodology has to be managed cost-effectively and planned judiciously to overcome

the limitations and challenges that might arise in using of ICT.

Significance of the Study

Imparting of knowledge through the digital media of ICT has a positive credential on the person who uses it and the impact created in the macrocosm is spell-binding in this century. Any institution for the matter of fact implements standards and norms for establishing a full-fledged backdrop of ICT.

It plans with the stakeholders and management officials to make this scenario a grand application oriented system. The quality of education being delivered through ICT pays rich dividends to the organization as the students from all walks of life prefer to learn through digital systems. Being taught to handle intricate equipment's of ICT, the teachers plan their lessons in a methodical way to convey the lesson to their students who involve in learning highly motivated.

The significance of this article is to bring about awareness to the general public and the many institutions of the area to nurture teachers to be trained in the concept of ICT. Such training to teachers becomes a significant feature of the study and those employed with that knowledge and caliber are sure to inspire students to reach greater targets of achievement. This form of learning precisely makes a student highly employable and socially resourceful in the community. ICT involved teaching-learning is considered a system of efficacy as it caters to the needs of many at a time. It regularizes the presence of students in a class as the teacher interests them by teaching through applications of ICT. A lot of changes have been brought into the realm of education by the initiation of ICT with improvements focused to cater to the needs of the younger generations of the world.

In relevance to this article, it should be assessed that the significant turnover of the predicament falls within the sample space of 42 staff inclusive of the deans and senior staff of the departments of DMI-St. Eugene University. These forty-two (42) sample spaces have taken the questionnaire to give the tally for the variables taken to consideration in the statistical evaluation. The novel initiation of teaching through a digital media is a welcome scenario among the young learners. Though a new

relevance taken to practice, yet the novelty of the situational stances lies within the expertise involved in running the project. Nonetheless, the forerunner of such a prime initiation in Zambia has brought befitting laurels on the effective implementation of the digital virtual teaching platform made accessible to the students of the century. The joy and cheer of learning devoid the heaviness of carrying books for a class session is much reduced which gives greater impetus to learning by the students. The novelty of the concern lies within this pretext and adheres to the perspectives of taking it for an effective and efficient practice in the upcoming years.

Limitation of the Study

The limitation is a hindrance to the entailed work system of ICT in an educational institution. ICT taken to full usage in DMI-St. Eugene University was a big challenge as it was not cost effective at the initial stages. But methodical planning turned into a resourceful application of greater benefit both for academic and administrative utilities. Limitations became a focus during the class sessions, as the students tend to become distracted and lose their focused concentration. At times, there was misuse of technology by the students which needed close monitoring during the class sessions. The implementation of this ICT in regular pattern, though advantageous, becomes an handicap in the absence of a staff for a session. It serves as a self-administered unit of workability yet to be monitored for maintenance and stability for continuous usage. Dire difficulty was faced by students staying in very far remote regions of Zambia, where network was not consistent. Students in the bush had not much knowledge in the use of handling electronic gadgets which was taken to concern by the management.

Research Methodology

Research methodology helps to identify the pattern in which the research analysis can takes its form on application of the right tool of research methodology. It delves into the major variables taken to study along with effective implementation of ICT in a system of work. In this relevance it can assessed that quantitative and qualitative methods were taken to analysis to derive the result as required on the impact of ICT in education.

Research methodology delves into identifying, selecting, processes and analyzing information as required of the topic. This unit of study helps in allowing the audience to evaluate the reliability and validity of the research writing. This topic has a large impact in this digital world and needed analytical and at the same time critical assessment of the concerned topic relevance and gathering of information. In quantitative reference of this topic concern, a generalized knowledge of the different concerns of information and communication technology is reviewed for gathering content information as required. A carefully designed knowledge acquisition has been taken to practice by reading referential books and papers of related concerns. Furthermore, qualitative study supported this research through verified interviews and questionnaires taken to practice to gather information to formulate this paper work. The problem statement and objectives of this paper are consistently referred to make this writing a successful one.

The questionnaire distributed to the selected 42 samples was of good evidential support for this research paper work. The variable derived out of this analysis paved way for an effective research design. Quantitative analysis deals with collection of information over a period of time and the data collected is statistically evaluated to get the required result to deliberate the conclusion. Qualitative analysis works on ways to improve the proper usage of ICT in an educational system for the goodness of the teacher and the taught.

Research Design

The strategically significant part of a research is integrated in the research design. The research design sets the procedure for the required data, the methods to be addressed to collect and analyze this data, and how all this information would support and provide evidence to answer the research question (Grey, 2014). Nevertheless, it is the major component of quantitative analysis. The details so gathered helps to pattern the research design which in this paper is mostly descriptive, correlative and experimental. The three variations have helped to organize the paper with details as required for the final assessment

Descriptive survey was used when collecting information on varied aspects of teacher's involvement, teaching capability, teaching support system, teaching policy, promotion, growth predicaments in caliber orientation, employment relationship and accessibility of ICT in the positional stances of the work place. Nevertheless, correlative and experimental has shaped in proper arranging of the information collected which is the essential component of research analysis. An observational and case-study analysis shall be the relevance to the research design as done to gather appropriate information for this paper content writing.

Population, Sample and Sampling Techniques

The sample taken for study is from the population of staff of the DMI St. Eugene University, Zambia, which has been the supportive unit for this research writing. As previously referred, a sample of forty-two (42) staff of DMI-St. Eugene University, Zambia was given the questionnaire to fill. A period of one week was given to the staff to fill the questionnaire. Each of the sample space was the learned staff who had basic awareness to ICT. The sampling techniques were simple random sampling and stratified sampling which helped to identify the required variables as possible viable units from a larger population. The sample was a combination of both male and female gender. The target population for this research was the staff having experience in teaching with a sound knowledge on their teaching subjects taken from the DMI-St. Eugene University, Zambia and most probably well-rehearsed in handling electronic media which is an asset to the modernity.

Data Collection Procedures

During this stage of data collection, the researcher determined the kind of information that was needed to be collected from the sample. The details as formulated in the questionnaire were designed in precision to the thought of the research topic statement. In fact, a timeframe was set to the sample, giving ample time for them to fill in the details before being collected. The number as required was determined for easy patterning of the statistical analysis.

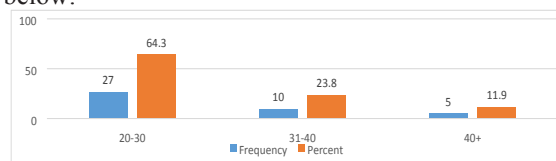
Being a researcher, permission was sought before initiating the work of distribution of questionnaires and collection of the data thereafter. A required period of one week was given to each of the sample space to complete their entries in the questionnaire. After the stipulated period of time the questionnaires were collected for further analysis. The statistical analysis was worked on with SPSS software, version 21.

Data Analysis Techniques

The statistical details denoted the percentage values of the relevant variables. These results were patterned into visual graphics depicting the frequency and percentage values for a clear predicament. Hence forth, the result was derived from the statistical presentation of the details filled by the sample which were taken for a graphical representation and to be interpreted in lieu with the result predicted. These graphical visuals were of fine support in the establishment of the result as required to the positive turns of the paper presentation.

Results and Discussion

The study of samples has provided evidential sequencing of the result and thereby to derive the conclusion for this paper. The forty (42) samples have provided the individual information as essential for this study. Furthermore, it has given an authentic support to deliberate the consequences on the determinants as necessary for effective functioning of the ICT based teaching and learning methodologies. The survey has a sample of forty-two (42) who are the most efficient and resourceful students of the university of DMI. St. Eugene University of Zambia, account to 23 female staff and 19 male staff. The staff range from an age group of 30 to 40plus years and have a minimum of four years of work experience as teaching faculty which is graphically represented as below:



This section of result and discussion will look into the analysis being done on the questionnaires of

the samples. The teaching staff are maximum with postgraduate degree in their professional credentials while others are doctoral degree holders of the university. Nevertheless, it has been found that the sample space showed most of them well-qualified in digital knowledge and to make use of digital media to enhance learning of students which is an added impetus to this paper work.

Discussion is on the conceptualized idea of whether the staff are eligible to teach students through ICT, the digital media of foremost significance. The stoic thought of the discussion is that the establishment has modern digital electronic resources, tools with effective strategies to implement the teaching learning methodologies in the best of the form as required. Beyond the teaching aids available, there is the possibility of using equipped studios and class-rooms with smart boards to make teaching by the staff viable and effective. The table 10 of the reasoning based on the questionnaire has the support link to this discussion.

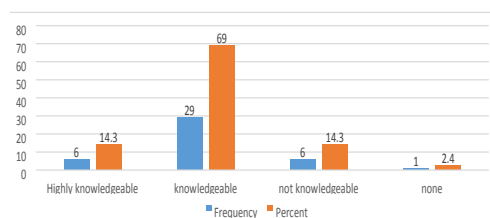
Measures Taken	Frequency	Percent
ICT Training	18	42.9
Support Materials	10	23.8
Teaching Aids	5	11.9
ICT Infrastructure	9	21.4
Total	42	100.0

Moreover, it is taken to discussion whether the staff are given access, equipped and trained to work in the media of ICT in the university. The outlook and outcome to the analysis has been positive and very advantageous to the usage as a factor of major concern of the topic statement of this paper.

Results and discussion taken to a positive outlook has a supportive extension to the thought of the researcher. It is true to the data analysis being done at the prior concern to this research writing. Well understood comprehensive analytical detailing has supported the discussion in the most effective manner to sustain this research paper writing. However, it is an optimistic exposure as the results show the adherence of teaching policy and management policies to enhance ICT in the institution for the benefit of the students. It reflects on implementing satisfaction to ICT based teaching learning patterns. The discussion shows the

integration of ICT to normal teaching methodologies to promote institutional growth and development for the resourceful future at easy accessibility.

It is the need of the discussion to reveal the fact that professional development has taken in form with the introduction of ICT in the university that every staff is getting to enrich their knowledge in digitalization and get equipped to modern tenets of teaching through this ICT platform which is the significant determinant of the education in modernity. The visual graphic below depicts the knowledge based identity of the staff.



In spite, of the benefits of the system, it is to be understood through this discussion that a few challenges of the media exist and that affects work and accessibility of the forum in discussion. The internet access to all regions where students enrolled seem to habitat is a challenge. Access to internet and wireless systems is the need to browse and google streaming of lessons for the students. Yet the students being given an electronic tablet/notebook is a skeptic and is sure to hamper learning on the part of the student. None the less, the media of learning and teaching should be interlinked on proper perceptions in this formulation of ICT in an educational institution.

The details of the statistical analysis and in cohesion to the thematic content of the article are presented as below: In-depth comprehensive review of the survey.

A small representative thought was previously referred yet in-depth analytical reference would add rhythm to this journal writing. The deliverance covers all the tables taken to statistical interpretation after the survey had been done. Each table is a constituent part of the content of the article with interpretative segments incorporated to add credence to the paper.

Tables one (1) to twenty-five (25) depict each of the relevant aspects as essential for this article presentation and the relevance is of greater support to thesis writing. Table 1: The number of sample space which account to 25 males and 19 females who are at the percentage of 54.8: 45.2. This is the distribution of respondents according to gender. Table 2: reflects on the distribution of respondents according to age. The sample space has an age range of staff from 30 to 40 years with the required qualification for the survey to be undertaken. Table 3: depicts the levels of education of the staff. In the survey, it was identified that more than half of the staff are post-graduates while one-third of them are doctorates. Some are holding professional qualifications and very less number are diploma holders. Table 4: depicts the working experience of the respondents. It is found that nearly half of them have a minimum of four years' experience while the rest seem to have more years of experience which is an added value to the working credentials. Table 5: denotes the knowledge that each of the staff possess in using ICT while teaching. It is found that 12% of them have very good digital skills, while 57% are good. Further 11% have to enrich knowledge and possess average potentials. 2% of them seem not aware of skills of ICT. This is a very valuable result analysis in writing of this article.

Table 6: It carries forward the relevance of teachers' ability and competency in using ICT while teaching. A positive outlook of this table is the fact that 81% of staff is capable of handling classes in the digital media while 19% seem to be not competent and require training. Table 7: brings forth the reference of the interest shown by the teachers and their motivation in teaching through the integrated ICT systems. Maximum numbers of them seem to be highly motivated. Table 8: creates a self-awareness criterion. Each of the teachers as respondents assesses their potentials in handling ICT, while presenting their class session. Maximum numbers of them are self-motivating as they fully appreciated this novel experience of digital teaching in a virtual platform. Table 9: reflects on an evaluation scheme of applicability to this online platform. The teachers' ability to assess their students through the digital interpretation and the analysis of the scores

using the proper tools of measurement as required of e-learning. Table 10: depicts the measures to be taken by the institution to improve the capabilities of teachers in their teaching and learning systems using ICT. It is an optimistic thought that this organization believes in training teachers to be computer savvy. Nearly 43% of the staff is trained in digital usage and support enhanced teaching skills.

Table 11: denotes the infrastructure of electronics being established in the institution which is sure to provide ample support in providing appropriate equipment to the staff. Further, this amplifies their involvement in using electronic equipment for their class sessions. Table 12: establishes the involved participation of staff in the ICT training made compulsory or not given to the staff in the institution. If given and acclaimed by the staff is a positive outlook to the institution. Nearly 57% of staff has shown interest to compulsory training in ICT knowledge acquisition. Table 13: shows that 59.5% of the staff expressing meticulous concern to the courses of pedagogical use of the ICT in teaching and learning processes and taken to practice in day to day work schedules. Table 14: brings awareness to the teaching policy for ICT based teaching. The realism of teaching is on the virtual platform which adds to maximized involved scenario of usage of digital media. Herein according to the survey, 69% of the respondents believe in such a policy. Table 15: is a reflection on the levels of knowledge acquisition of staff in accordance to the teaching policy adapted by the institution. 69% of the staff fit into this category. Table 16: presents the satisfactions of the staff in the implementation of the teaching policy of ICT wherein three-fourth of the staff accept the implementation while one-fourth negate the policy conditions. Table 17: refers to the integration of ICT to teaching and learning as a possible development to enhanced growth of the institution. Herein nearly 98% of the staff is for it which is a holistic success of the institutional policies of virtual digital teaching scenario.

Table 18: highlights the special programs initiated at improving teaching and learning using ICT as the main media of application. The negative aspects are very minimal while the positive outlook to realism is at its peak of deliverance. The impact

is fully realized by 73% of the staff while not taken to acceptance accounts to 28.8% of the sample space. Table 19: Justifies the availability of internet at workplace scenario. As far this institution is concerned, every student of the virtual platform and vis-to-vis session have the access to network links available in the area. Precise is the net links and webs available from Zamtel and Airtel of Zambia. This is acclaimed for easy access in the campus and in virtual platform for students far away. Table 20: identifies students' access to ICT equipment and make the best use of their learning possibilities during the session and off-time bring in the campus. Staff acceptance to this conditionings account to 78% which is a success to the implementation. Table 21: Presents the challenges faced in accessing information from the staff to the students. Anyways, it is a practical difficulty which could be sorted out. Even in this conditioning, nearly 73% of the staff state that they do not face any challenges and that they are able to deliberate their lessons to their students in the most effective manner. Table 22: Depicts the encouraging work atmosphere through this digital platform in vogue. It has been identified that ICT promotes healthy work atmosphere to the staff and 90% percentage acceptance is denoted in the statistical study taken to survey. Table 23: Relates the employment relationship amongst the staff wherein 19% stand for excellence in communication possibilities, 44% find it very good, 34% reflect as good but only 2% say it is not applicable. Henceforth the overall survey is optimistic and all the tables taken to statistical representation and interpretation show positivity to the approach taken to study in writing this paper. The in-depth analysis is represented in annexure attached as SPSS for evidence to depiction.

Conclusion and Recommendations

Summative deciphering of this research work would deliver the concern of effectiveness of the introduction of ICT in imparting educational needs of an organization. Taking the concern to DMI St. Eugene University, it is a very relevant to the topic taken to study and this abstract is sure to support the research thought in precise. Emphatically to accept the fact that ICT enhances good working atmosphere in the organization and the employment relationship

among staff members is strengthened through the efficacy of communication through the digital media.

The challenges of the system could be overcome with teachers' self-efficacy, teacher's involvement; teaching capability, teaching support system, teaching policy, promotion of staff, growth of the establishment, employment relationship and accessibility of ICT facilities. The paper is a genuine recommendation to the field of study taken for research work adhering to the parameters and strategies as required to the statement sentence.

Undoubtedly, this research study as presented in this article is sure to enhance strengthened group collaboration among the other educational institutions through ICT. In the process of continuous use, there is possibly a speedy dissemination of knowledge to all parts of Zambia through the accessible ICT made possible at DMI-St. Eugene University, Zambia

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