COMPUTERIZATION AND WORK EFFICIENCY OF NON – TEACHING EMPLOYEES AT THE UNIVERSITY OFPERPETUAL HELP LAGUNA

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INTRODUCTION

Communication Technology presently occupies a prominent place in the new social order and most assuredly will continue to do so in this period before the turn of the century. The increasing dependence of man's way of life upon scientific programs through the scientific use of the computer results in the growing emphasis in science innovative processes.

In schools, the technological advancement on the use of computers emphasizes accurate reflection of advanced communication processes and programs. It presents structured and directed way of asking and answering questions. Furthermore, the phenomenon is not only based on a body of facts nor just a collection of principles or just a set of machines for measurement. It is a new set of meaningful experience through the use of the computer.

Furthermore, the transaction-processing and report-generating programs are usually written by specialized programmers who are organized into specialized data-processing departments. Often, the large specialized computer systems, their operators, and their programmers are all located in the office of the Information Technology Services (ITS) isolating them from organizational life. Most of the organizations have reorganized their computer-based information systems to be more responsive and flexible, and to support a richer array of organizational activities.

At the University of Perpetual Help System the development of the speed communication – based program and using of computer in making transactions started. The new technology web based-program which is school automate or GTI designed to connect online via internet connection and to speed up the registration process and keep tract of students' records, subject offerings and utilization. The staff and secretaries of the different departments/offices are involved in computerization of various reports.

OBJECTIVES

The research aimed to determine the effectiveness of computerization in workplace and its relation to work efficiency of the non – teaching employees of University of Perpetual Help Laguna.

Specifically, this study sought answers to the following questions:

1. What is the level of effectiveness of computerization in the workplace in terms of:
    - 1.1 software utilization,
    - 1.2 procedure productivity,
    - 1.3 work standard,
    - 1.4 ease of learning, and
    - 1.5 effort effectiveness?
2. What is the level of work efficiency of non – teaching employees with regard to the following aspects:
    - 2.1 qualitative,
    - 2.2 responsive,
    - 2.3 quantitative, and
    - 2.4 innovative?

3. Is there a significant relationship between the level of effectiveness of computerization in the workplace and the work efficiency of the non – teaching employees?

Conceptual Framework

The proceeding shows the course of the present study. Computerization and work efficiency are presented together with the expected job performance of the employees of University of Perpetual Help Laguna.

Considered as the Independent Variables are: Software Utilization, Ease of Learning programs, Work Standard, Procedure productivity and Effort Effectiveness for Computerization.

The Dependent Variables include the Qualitative, Responsive, Quantitative and Innovative Work Efficiency of the Non-teaching Employees of University of Perpetual Help Laguna.

The social design of work systems with computing does not necessarily improve the quality of peoples' work lives. For example, some managers have computerized relatively routinized clerical work by fragmenting jobs and tightening supervisors' abilities to monitor the quality, pace and speed of people's work. These same managers may develop good systematic training programs for the clerks whose work is now more regimented. However, social design can also be very benign. It encourages participants in a computerization project to review the web of practices and policies related to computing which can otherwise be "unanticipated."

Review of literature

A technology configured at one level of organization may be re-configured differently at another to ensure that local interests are protected. The systemic adjustment of resources, actors and activities is ongoing, and choices are made on the basis of social outcomes rather than technical efficiency. An important dimension of social informatics is to explore where and when such games are played. Concepts such as *frames* and *games* suggest a range of activities and actors that goes far beyond the simple “tool” and “user” models of conventional technical analysis. Kling and his colleagues indeed proposed a number of alternatives to the traditional language of computing: *social actor* (Lamb and Kling, 2003), *socio-technical interaction networks*, *guilds* and *truth regimes* – terms they suggest have higher resolving power than *users* or *user groups*.

This paper so far has discussed social informatics as a research approach that is embedded in practice and has shown how the world of practice feeds the explanations that are developed (and sometimes co-developed with practitioners) by researchers. But can non-academic practitioners easily use the social informatics framework in their workplaces? Managers and non-academic practitioners often asked if this approach is for academic researchers only and want to know what it can offer a manager or a designer or a practitioner that will improve their experience of technology. The answer in social informatics provides a way of extending your field of vision with multiple points of view and of categorizing what you see that allows the consequences of technological choices to be traced across the different frames. The social informatics frameworks

draw attention to actions, events, people and processes that are often ignored and allow explanations to be pursued and critical paths to be identified. It can thus support more realistic efforts in design and post-implementation development in organizations.

The level of effort involved is a common second question. The time and effort to acquire relevant data and analyze it are no greater than those required in the “one-off” traditional approaches to organizational analysis that are mentioned at the start of this article. These vary, of course, in style and purpose. Formal approaches to computer design such as structured systems analysis and design, for example, require considerable investment of time in the design and implementation of interview or questionnaire protocols. User-centered design approaches such as contextual design and use-case modeling require those involved to undertake extensive grounded observation and derive actionable abstractions of processes from them. More sustained approaches to analysis that involve ongoing performance measurement like the Balanced – Score Card (which has some structural resemblances to the social informatics framework described above) make heavy demands on data-gatherers at all levels of organization. Though the effort involved is not trivial, practitioners can thus be reassured that social informatics is not unusually “effortful.”

Social informatics is one of a number of approaches to studying information and communication technology (ICT) in the workplace. (The text by Horton, Davenport & Wood-Harper (2005) placed Kling’s work in a broader tradition. Though such approaches vary in scope and on the emphasis given to specific methodologies, they have a common interest in how technology is humanized, in contrast to how humans may be systematized. Though the usefulness of such distinctions (human/technical; subject/object; agent/structure) may be questioned in a world of pervasive computing, where a non-polar term like *augmentation* may be more appropriate, in many organizations the historical distinction has shaped the installed base, the ways in which computing is perceived and the rationale for design and training. For socio-technical researchers the question of how technology is humanized with an installed base that is sometimes “inhumane” has a simple answer: go to the workplace; stick with practitioners; observe, ask questions absorbed on-site documentation and elicit accounts and reflections as practitioners go about their tasks and encounters.

Ellen Balka March (2000), discussed how different areas of society are being transformed by computer technology. They focus on women's experiences as computer scientists, and the mechanisms through which various aspects of system design contribute to the gendered nature of computing.

Rob Kling (2000), created a seven-part book of issues that surround the integration of technology into businesses and education. He validated his beliefs with case studies and testimonials from experts in their respected areas.

Alan Cooper (2000), shared his observation on how the software development industry has evolved. The book is an easy read and is very insightful. If you have ever wondered why you can't program your VCR or why your children don't need to read the directions, this book will provide you with pragmatic reasons. Cooper is at times repetitive (I assume he is redundant in order to make his point clear to non-techi types). If you are a software programmer you will possibly find Alan Cooper's, The Inmates Are

Running The Asylum " to be frustrating or perhaps insulting. On the other hand, if you are a software user (the other 99% of the world) you may like that Cooper blames programmers for our inability to intuitively use technology, which he affectionately refered to as "cognitive friction".
Stroh, (2000), summed up her managerial innovative pamphlets when she said that: (1) Teachers of advanced communication should access themselves with program instructions to enable them collate the summation of learning. (2) It is unlikely that educational technology will be used more in English, Science and Computer literacy augmentation courses. and (3) Computerized format of reports particularly, advanced form of communication technology should be repeatedly analyzed and synthesized by experts to eliminate fusion of incoherent data.
Frames, according to Snow (2004), a useful unit of analysis for practitioners and researchers. They accommodate multiple levels of inquiry and involve a range of techniques to analyze different factors that affect the dynamics of social movements, such as political opportunity, discursive fields, opportunity structures and narrative identity.
Lamb and Kling, (2003), *socio – technical interaction networks, guilds and truth regimes* – terms they suggest have higher resolving power than users or user groups.

METHODOLOGY

The researcher used the descriptive method of research. This method involves collection of data in order to test the hypothesis or to answer questions concerning current status performance of the subjects of the study. It describes the nature of situations as it exists at the time of the study. It explores the cause of particular phenomena and is designed to investigate and gather information about present existing practices, contemporary events, and the characteristics of group individuals, their behavioral patterns, attitudes or opinions.

The primary sources of the data were the questionnaires, while the secondary sources were the documents filed in the respondents' offices, books, internet, journals, etc. which were used as reference materials in preparing the questionnaire.

Result and Discussion

This chapter presents, analyzes and interprets the findings based on the specific problems that were stated in the beginning of the study.

1. Level of Effectiveness of Computerization;

Table 1 shows the level of effectiveness of computerization in terms of software utilization, procedure productivity, work standard, ease of learning process and effort effectiveness.

As indicated, among the five aspects; software utilization, procedure productivity, work standard, ease of learning process and effort effectiveness, only one was found to have a " very effective" rating, that was aspect 2 - " procedure productivity; typing a document" with a weighted mean score of 4.52.

On the other hand, the lowest level of effectiveness (weighted mean = 3.98) was aspect 1 – software utilization; robust", interpreted as "effective".

Table 1

The Level of Effectiveness of Computerization

NO.	ASPECT	INDICATORS	Weighted Mean	Interpretation
1	Software Utilization	User friendly	4.34	Effective
		Efficiency	4.26	Effective
		Robust	3.98	Effective
		Accuracy	4.24	Effective
2	Procedure Productivity	Typing a Document	4.52	Very Effective
		Browsing	4.20	Effective
		Input output processing	4.32	Effective
		Sorting of data	4.34	Effective
		Printing	4.48	Effective
		Accuracy	4.26	Effective
3	Work Standard	Operational	4.26	Effective
		Quality	4.20	Effective
		Quantity	4.16	Effective
		Less error	4.00	Effective
		Printing	4.26	Effective
		Accuracy	4.16	Effective
4	Ease of Learning Process	User friendly	4.30	Effective
		Browsing	4.18	Effective
		Input output processing	4.24	Effective
		Sorting of data	4.12	Effective
		Printing	4.30	Effective
		Time-based	4.02	Effective
5	Effort Effectiveness	User friendly	4.32	Effective
		Time-based	4.12	Effective
		Robust	4.06	Effective
		Fast-operative	4.12	Effective
		Responsive	4.16	Effective
		Accuracy	4.20	Effective
Overall Weighted Mean:			**4.22**	**Effective**

Table 1 further revealed similarities in the extent of perceptions such as in indicators; "Efficiency", and "Accuracy in Software Utilization", "Operational" in Work Standard and "Printing" in Procedure Productivity, with weighted mean score of 4.26; "Browsing of Procedure Productivity", "Quality of Work Standard", and "Accuracy of Effort Effectiveness", with weighted mean score of 4.20; "Quantity",

And "Accuracy of Work Standard" and "Responsive" of Effort Effectiveness, with weighted mean score of 4.16; "Sorting of Data of Procedure Productivity", "Time – based" and "Fast – operative" of Effort Effectiveness, with weighted mean score of 4.12;

"User Friendly" in Software Utilization and "Sorting of Data in Procedure Productivity", with weighted mean score of 4.34; "Input Output Processing of Procedure Productivity" and "User Friendly of Effort Effectiveness", with weighted mean score of 4.32; and "User friendly" of Software Utilization and "printing of procedure Productivity", with weighted mean score of 4.30.

This implies for the need to strengthen further the level of effectiveness of computerization through enhancement of the staff's competencies in line with software utilization: robust; work standard: less error; ease of learning process: time based; and effort effectiveness: robust.

As a whole, the level of effectiveness of computerization was perceived to be "effective" as evident by its overall weighted mean score of 4.22.

2. The Efficiency Level of Non – teaching Employees.

Table 3 presents the work efficiency level of non - teaching employees along four aspects: Quantitative, Responsive, Quantitative, and Innovative.

Table 2

The Work Efficiency Level of Non-teaching Employees

NO.	ASPECT	INDICATORS	Weighted Mean	Interpretation
1	Qualitative	Meaningful	4.26	Agree
		Objectives	4.18	Agree
		Task-based	4.06	Agree
		Result-based accentuated	3.98	Agree
		Time based	4.00	Agree
2	Responsive	Fast operative	4.16	Agree
		Adaptive	4.18	Agree
		Purposive	4.20	Agree
		Collaborative	4.06	Agree
3	Quantitative	Fast operative	4.24	Agree
		Task has tremendous operant in nature	4.04	Agree
		Gains in learning are achievable	4.18	Agree
4	Innovative	Creative	4.30	Agree
		Insignificant margin of error	4.10	Agree
		Well task	4.16	Agree
		Accentuated	4.08	Agree
Overall Weighted Mean:			**4.14**	**Agree**

As revealed, the highest computed value of Work Efficiency Level (Weighted mean = 4.30) was aspect 4 – "Innovative; Creative" interpreted as "agree".

On the other hand, the lowest, (Weighted mean = 3.98) was qualitative aspects result based accentuated.

On the average, the work efficiency level of non – teaching employees was perceived to be "agree" as evident by its overall weighted mean score of 4.14.

The said findings were attributed to the work efficiency level of non – teaching employees' educational background, series of training attended related to computer education as well as experiences acquired in work.

Table 3

Composite Table on the Work Efficiency Level of Non-teaching Employees

Aspect	Weighted Mean	Standard Deviation	Interpretation	Rank
1. Qualitative	4.10	0.12	Agree	4
2. Responsive	4.15	0.06	Agree	2.5
3. Quantitative	4.15	0.10	Agree	2.5
4. Innovative	4.16	0.10	Agree	1
Overall Weighted Mean: 4.14				
Overall standard Deviation: 0.03				
Variance: 0.00				

Based on the ranking the "innovative" aspect was ranked 1; followed by "responsive" and "quantitative" aspects in ranked 2.5 and last in rank was the "qualitative" aspect with weighted mean scores was of 4.16, 4.15 and 4.10, respectively.

The findings confirmed the result of the study of: Strotter (1999) who admitted that an advanced technological communication art, as a school program, encompasses two elements, namely; Quantitative components and qualitative components.

3. Correlation between the Level of Effectiveness and Work Efficiency Level of Non – teaching Employees;

3.1 Level of Effectiveness of Computerization and Qualitative Work Efficiency Level.

Table 5 reveals both "moderate" and "weak" relationships between the level of effectiveness of computerization and qualitative work efficiency level of non-teaching employees at 2.000 level of significant.

"Moderate relationship" was seen in aspects; "Procedure Productivity" (r = 0.42, with a t value of 3.25), "Work Standard" (r = 0.49 with a t value of 3.87), and "Ease of Learning Process" (r = 0.47 with a t value of 3.71)

On the contrary, “weak relationship” was revealed in aspects: “Software Utilization” (r = 0.31, with a t value of 2.26) and “Effort Effectiveness” (r = 0.38, with a t value of 2.88).

DISCUSSION

This chapter includes the findings, conclusions drawn and recommendations made.

In schools, the technological advancement on the use of computers emphasizes accurate reflection of advanced communication processes and programs. It presents structured and directed way of asking and answering questions. Furthermore, the phenomenon is not only based on a body of facts nor just a collection of principles or just a set of machines for measurement. It is a new set of meaningful experience through the use of the computer.

Computer-based technologies are potentially socially transformative. By transformative, it means that they can play key roles in restructuring major social relationships - interpersonal, intergroup, and institutional. Computerized and communication technologies enable organizations to create different architectures for processing and accessing information. They can support different forms of work organization. Computerized systems enable the restructuring of social relationships by altering the kinds of information readily available, reorganizing patterns of access to information, altering the cost and work for organizing information, and shifting patterns of social dependencies for key resources, such as computing and skilled computing staff. Despite many potentialities supported by computerization, organizations selectively adopt and integrate them into work processes

The parameter of the study covered the effectiveness of computerization in the work place and the work efficiency of non – teaching employees of University of Perpetual Help System Laguna. It also looked into its relationships.

Summary of Findings:

The significant findings of the study are as follows;

The Level of Effectiveness of Computerization

The level of effectiveness of computerization was found to be “Effective” in all aspects, as evident by the obtained overall weighted mean scores, ranked accordingly, these are: First, Procedure productivity (Weighted Mean = 4.35, Standard Deviation = 0.12); Second, Software Utilization (Weighted Mean = 4.20, Standard Deviation = 0.16); Third, Work Standard (Weighted Mean = 4.17, Standard Deviation = 0.10); Fourth, Ease of Learning Process (Weighted Mean = 4.19, Standard Deviation = 0.11); Fifth, Effort Effectiveness (Weighted Mean = 4.16, 0.19)

On the average, the effectiveness level of computerization was found to be “Effective”, with an overall weighted mean score of 4.22 and 0.08 overall standard deviation.

The Work Efficiency Level of Non-teaching Employees

The work efficiency level of non-teaching employees was found to be average in all aspects, as evident by the obtained overall weighted mean scores, ranked

accordingly, these are: First, Innovative (Weighted Mean = 4.16, Standard Deviation = 0.10); Second, Quantitative (Weighted Mean = 4.15, Standard Deviation = 0.10); Third, Responsive (Weighted mean = 4.15, Standard Deviation = 0.06); Fourth, Qualitative (Weighted Mean = 4.10, Standard Deviation = 0.12);

On the average, the work efficiency level of non-teaching employees was found to be “effective” with an overall weighted mean score of 4.14 and 0.03 for standard deviation.

Conclusions:

Based on the forgoing summary of findings, the following conclusions are drawn:

The level of effectiveness of Computerization was “Effective” in all aspects: Software Utilization, Procedure Productivity, Work Standard, Ease of Learning Process, and Effort Effectiveness.

The work efficiency level of non-teaching employees was found to be “agree” in all aspects, Qualitative, Responsive, Quantitative and Effort Effectiveness.

The correlation between the level of effectiveness of computerization and the work efficiency level of non-teaching employees was found to be of “moderate relationship”.

The null hypothesis which states that – there is no significant relationship between the level of effectiveness of computerization and the work efficiency level of non – teaching employees was partially sustained.

Recommendations:

Based on the aforementioned summary of findings and conclusion drawn, the following recommendations are made:

Further enhancement in all aspects of computerization should be undertaken through; conducting of the proper training to all non-teaching employees by the HRD, sending non – teaching employees to seminars and conferences about implementation of computerization, undertaking research before implementation guidelines for employees operation, giving full support to enhance effectiveness of computerization to raise the efficiency level of non-teaching employees, upgrading the skills of employees in all aspects; and providing new computers, printers and other equipment to all offices to make the performance of all non – teaching employees effective.

Formulation of new policies which will enhance the computerization program of the University. Conduct of periodical evaluation of the Program. Utilize a new software or program for Payroll and PCSD department to make a better performance and render good service to all employees. Undertake a follow – up study to determine the improvements made after this study was conducted.

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