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Assessment of Computer Literacy of the College Faculty of Nueva Ecija University of Science and Technology Gabaldon Campus

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Abstract: This study aimed to assess the computer literacy levels of the college faculty of Nueva Ecija University of Science and Technology – Gabaldon Campus. A total of 36 instructors from multiple non-computing departments participated in the study. The researcher assessed the levels in terms of computer skills, software use, and routine computer use. The study utilized the descriptive method of research using survey questionnaires that has six parts: general operations of computers, communication and internet, word processing, spreadsheet, graphics, and general technology application. After collecting the data needed, the data were tabulated, analyzed, and interpreted. The findings showed that the college faculty of the Nueva Ecija University of Science and Technology- Gabaldon Campus have limited skills in regards to general computer applications, communication, and the internet but are very proficient with word processing and spreadsheet. Moreover, the study found evidence that there should be a professional development training programs for instructors to incorporate computer technology as a classroom tool and means of managing instruction.

Keywords: ICT; computer literacy; technology; training

1. Introduction

The use of the Information, Communication, and Technology (ICT) can greatly contribute to the basic elements of its effectivity in the classroom. Some studies show that computer-based technology has a positive association with student engagement in higher education (Dahiya, 2018; Schindler et al., 2017; Ghavifekr & Rosdy, 2015). It has especially shown its purpose during the Covid-19 Pandemic when educational institutions were forced to integrate online teaching modes to

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sustain classes (Haleem et al., 2022). However, possible impediment to effectively integrating ICT in the classroom are the computer literacy skills of the instructors to use, access, and provide technical support for teaching and learning (Chowdhury et al., 2018).

Computer literacy can be described as the ability to use computers to perform a variety of tasks. A wide variety of computer skills are useful and, in some cases, required as an essential part of college learning and employment for moral individuals. However, instructors who teach computing or computer literacy need different competencies than teachers who only use a computer in their teaching; teachers who neither use nor teach about computers need only general awareness of computers. In addition to differing viewpoints about its meaning and the practices that take place in its name, computer literacy compounds two ideas: (1) the computer as a classroom tool and (2) the computer as a subject of instruction.

In the classroom, a computer may serve as a medium of instruction for the teacher (e.g., CAI, drill-and-practice, and simulation); as a means of managing instruction (for example, grade book, diagnostic testing, lesson prescription, and CMI); and in various other ways (for example, in producing tests, and word processing). The specific skills and knowledge required to make teachers computer literate remain undefined. An approach that might facilitate agreement would be to accept the premise that "responsible curriculum choice must always attend to what knowledge for whom and for what possible uses" (Davis, 1998).

Acknowledgment of this concept would admit the impossibility of defining computer literate skills or knowledge for all teachers. Individual teachers need specific competencies to deal with specific classroom situations.

Computer literacy is included in the programs of some teacher training institutions, such as Arizona State University, Columbia University Teacher's College, Stanford University, North Texas State University, and Lesley College. According to the American Association for Higher Education-ERIC Higher

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Education Research No.6 (Masat, 1981), teacher training programs on the whole presently neglect computers.

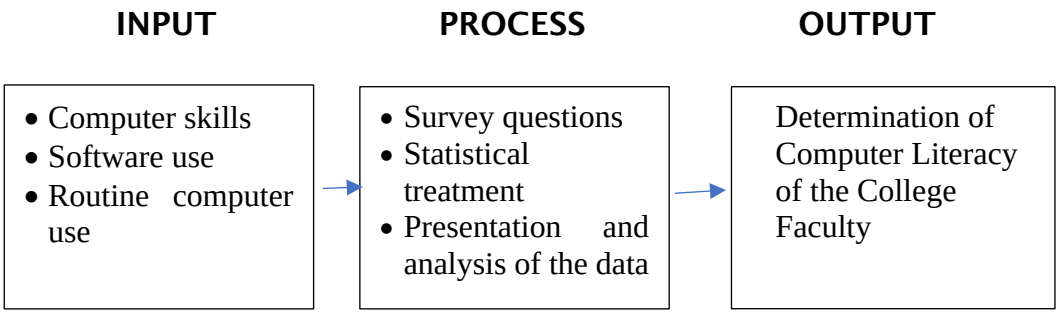
Objectives of the study

The main objective of this research is to assess the Computer Literacy of the College Faculty of Nueva Ecija University of Science and Technology – Gabaldon Campus. Specifically, this research aims to assess the levels of computer skills, software use, and routine computer use.

Conceptual Framework

The conceptual model that will be utilized in this research study is the input-process-output model which displays the sequence of boxes that are interconnected.

Figure 1. Research Paradigm



2. Methodology

The study utilized the descriptive method of research using survey questionnaires. The survey questionnaire has six parts: general operations of a computer, communication and internet, word processing, spreadsheet, graphics, and general technology application. There are a total of 36 instructors that do

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not teach computing but are in the field of agriculture, education, and hospitality management. After collecting the data needed, the data were tabulated, analyzed, and interpreted. The degree of responses was categorized and described as shown in table 1.

Table 1. Rating Scale and Verbal Description of Ratings

Value	Rating Scale	Verbal Description
5	4.5 – above	Expert (can teach it to others)
4	3.5 – 4.4	Very proficient (can come up with new solutions)
3	2.5 – 3.4	Good, adequate for most tasks
2	1.5 – 2.4	Sufficient for basic tasks only
1	1.0 – 1.4	Very limited ability
0	Below 1	No ability

3. Results and discussion

The section includes the presentation, analysis, and interpretation of the NEUST College Faculty – Gabaldon Campus data gathered. As shown in Table 2, respondents were assessed on computer literacy using the six indicators.

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Table 2. Weighted Means of Computer Literacy of Faculty in the Different Areas of Computer Operations

Computer Literacy Indicators	**WM**	**Verbal Description**
1. General Computer Operations		
a. Perform Elementary Tasks	3.51	Very proficient
b. Manipulate Files	3.31	Good, Adequate for more tasks
c. Use keyboard for Data and Program Entry	2.59	Good, Adequate for more tasks
Average WM	*3.13*	*Good, Adequate for more tasks*
2. Communication and Internet		
a. Use Email	3.00	Good, Adequate for more tasks
b. Use Internet	2.90	Good, Adequate for more tasks
Average WM	*2.95*	*Good, Adequate for more tasks*
3. Word Processing		
a. Perform Basic Word Processing Tasks	4.15	Very proficient
b. Perform Editing Tasks	3.81	Very proficient
c. Perform Formatting Tasks	4.05	Very proficient
d. Create References and Citation	3.57	Very proficient
Average WM	*3.89*	*Very proficient (can come up with new solutions)*
4. Spreadsheet		
a. Perform Data Entry Tasks	3.31	Good, Adequate for more tasks
b. Perform Editing Tasks	3.82	Very proficient
c. Perform Formatting Tasks	3.54	Very proficient
Average WM	*3.55*	*Very proficient (can come up with new solutions)*
5. Other Applications		
a. Graphics	2.64	Good, Adequate for more tasks
b. General Technology Application	2.66	Good, Adequate for more tasks
Average WM	*2.65*	*Good, Adequate for more tasks*
6. General Technology Application *Average WM*	*3.23*	*Good, Adequate for more tasks*

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General Computer Operations

The respondents got an average weighted mean 3.13 which has a verbal description of the good, adequate for more tasks. Regarding the area to perform elementary tasks, the weighted mean is 3.51 with a good, adequate verbal description for more tasks. This indicates that the college faculty can perform boot process, virus protection, install software and search for files directories.

Second, area manipulates files has a weighted mean of 3.31 with a verbal description of the good, adequate for more tasks. This indicates that the college faculty can retrieve copy, move, delete, back-up files, organize files in subdirectories/folders, and import and export files. Last are using the keyboard for data and program entry has a weighted mean of 2.59 with a verbal description of the good, adequate for more tasks. This indicates that college faculty place fingers on the home keys and navigate appropriately from them to other keys. This means that the respondents can manipulate files and perform elementary tasks.

Communication and Internet

The average weighted mean for the indicator Communication and Internet is 2.95 with a verbal description of the good, adequate for most tasks. Regarding the area to our email, the weighted mean is 3.0 with a verbal description of the good, adequate for most tasks. This indicates that the college faculty can sufficiently send and receive/enclose and recover documents attached to e-mail messages. Under the area to use the Internet, the weighted mean is 2.90 with a verbal description of the good, adequate for more tasks. This indicates that the college faculty are good and could adequately navigate or access, use search engines and download and print desired items from the Internet. This simply means that the respondents can use the Internet for web browsing, email and printing desired items from the internet.

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Word Processing

Under Word Processing, the respondents got an average weighted mean of 3.89 with a verbal description of very proficient which means they can come up with new solutions. Regarding the area to perform basic word processing tasks, the weighted mean is 4.15, with a verbal description of very proficient. This indicates that the college faculty are proficient to perform basic word processing. In the area perform editing tasks and perform editing tasks the weighted mean is 3.81 and 4.05 respectively with a verbal description of very proficient. This means that the college faculty can cut a copy and paste selected objects, insert and delete selected objects and make corrections using grammar check and thesaurus. For the area create references and citations, the weighted mean is 3.57 with a verbal description of very proficient. This indicates that the college faculty can adequately place footnotes or endnotes, work cited pages, and insert headers or footers. The findings imply that the college faculty can perform advanced word processing tasks.

Spreadsheet

For Spreadsheet, as an indicator of computer literacy, the respondents got an average weighted mean of 3.55 with a verbal description of very proficient (can come up with new solutions). The area to perform data entry tasks has a weighted mean of 3.31, with a verbal description sufficient enough for data entry tasks only. The area that performs editing tasks has a weighted mean of 3.82 with a verbal description of very proficient. This indicates that the college faculty can perform minimal commands for performing editing tasks. For the area of performing formatting tasks, the weighted mean is 3.54 with a verbal description of very proficient. This indicates that the college faculty can sufficiently apply appropriate formats for cells and align cell contents and set or change row and column width and height. This simply implies that the respondents can perform very proficiently in data entry, editing, and formatting tasks.

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Graphics

The respondents got an average weighted mean of 2.65 for graphics with a verbal description of the good, adequate for most tasks. Regarding the area to create and manipulate graphics files, the weighted mean is 2.64 with a verbal description of the good, adequate for most tasks. This indicates that the college faculty was sufficiently enough to create electronic materials for classroom presentations. This implies that the faculty can create and manipulate graphics files for instructional materials.

General Technology Application

Finally, the average weighted mean for General Technology Application is 3.23 with a verbal description of the good, adequate for most tasks. This means that the college faculty of the Nueva Ecija University of Science and Technology – Gabaldon Campus can adequately develop instructional materials using presentation software but is limited in discriminating between various technologies and their capabilities, covert file, performing software upgrades, and creating an instructional design using technology.

Table 3. Overall Weighted Mean of Assessment on Computer Literacy for College Faculty of Nueva Ecija University of Science and Technology

Gabaldon Campus

Area of Literacy	Verbal Description
General Computer Operation	Good, adequate for most tasks
Communication and Internet	Good, adequate for most tasks
Word Processing	Very Proficient
Spreadsheet	Very Proficient
Graphics	Good, adequate for most tasks
General Technology Application	Good, adequate for most tasks

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Shown in table 3 is the summary of the respondents' assessment of their computer literacy using the six indicators having the average weighted mean of 3.23 with a verbal description of the good, adequate for most tasks. Though some areas show great proficiency, on the whole, there are still areas where faculty need to improve.

4. Conclusion and Recommendations

The study showed that the college faculty of the Nueva Ecija University of Science and Technology- Gabaldon Campus has adequate skills in general computer applications, communication, and the internet. Moreover, they present very proficient skills to use the spreadsheet and word processing and good, adequate for most tasks to use technology applications. The respondents should undergo training to facilitate elementary tasks, manipulate files, use the keyboard for data and program entry, and use the internet to navigate the web and download and print desired items from the Internet. They should also undergo training on creating and manipulating graphics files, performing data entry, editing, and formatting tasks. With the changes in technology, the different elements of computer literacy are prone to change constantly, and hence it is important for a college faculty to constantly revise the course to include the latest technological advancement.

Training should be mandatory such as to discriminate between various technologies and their capabilities (e.g. scanning, videoconferencing, etc.) to create an instructional design using technology and develop instructional materials using presentation software (e.g. PowerPoint, flash 5).

REFERENCES

Chowdhury, S. A., Arefin, S., & Rahaman, M. M. (2018). Impacts of ICT integration in the higher education classrooms: Bangladesh perspective. *Journal of Education and Practice*, *9*(32), 82-86.

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Dahiya, B. P. (2018). „Role of ICT in Higher Education ". In *Conference Academic and Administrative Audit in Higher Education, Punjab, India*.

Ghavifekr, S., & Rosdy, W. A. W. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. *International journal of research in education and science*, *1*(2), 175-191.

Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, *3*, 275-285.

Masat, F. E. (1981). Computer Literacy in Higher Education. AAHE-ERIC/Higher Education Research Report No. 6, 1981.

Schindler, L. A., Burkholder, G. J., Morad, O. A., & Marsh, C. (2017). Computer-based technology and student engagement: a critical review of the literature. *International journal of educational technology in higher education*, *14*(1), 1-28.