Computer Literacy as A Tool of Quality In Higher Education and Graduates' Employability

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ABSTRACT

This work analyses the relationship between computer literacy and graduates' employability. Presently, Higher Education Institutions (HEIs) in Cameroon face ever-changing challenges due to dramatic shifts in the ongoing digitization of higher education (HE) and globalization trends. As a result, these institutions must adopt new strategies for attracting future students and for improving employability. In today's fast-paced world, the importance of computer proficiency in various job sectors cannot be overstated. Employers across different industries increasingly value individuals who possess advanced technological skills and a deep understanding of digital tools. Graduates who possess these skills are in high demand by employers in different industries. Skills like programming are becoming increasingly important. Computer literacy has become a vital skill for individuals in the digitalized workforce, particularly as technology continues to play a significant role in every industry (Martin Weller, 2019). This study adopted the correlational research design involving the simple random sampling technique. Based on Krejcie and Morgan's (1970) table for sample selection, we had a sample of 532 graduates registered at the national employment fund in Cameroon. Data was collected via a questionnaire. The instrument was administered, and the data collected were analyzed via SPSS. To analyze complex inter-relationships between observed and latent variables (constructs), the Partial Least Squares Structural Equation Modeling (PLS-SEM) was used. Findings reveal that computer literacy has a significant relationship with graduates' employability. This is illustrated by the overall P-value less than 0.05.

Keywords: computer literacy; digitalization; quality; graduates' employability.

INTRODUCTION

HEIs bear the onus of equipping graduates for professional roles across various fields, as well as cultivating computer literacy in their students to impart the essential skills for employability and continuous learning. Computer literacy, encompassing technological proficiency and information literacy, is influenced by factors such as students' background, familiarity with computers, the level of emphasis placed on it in educational settings, and the support offered by ICT in educational systems (Aesaert et al., 2014).

As the landscape of higher education is changing continuously, the emphasis on the quality of instruction is gaining prominence. Shifts such as heightened global competition, the diverse geographical and social makeup of student bodies, the integration of information technology, and the trend towards digitization have elevated the significance of teaching quality in higher education. Proficiency in computer literacy fosters critical thinking and problem-solving skills in students, engaging and motivating them through exposure to both hardware and software. The abrupt shift from traditional face-to-face instruction to remote teaching necessitated a faculty with varying levels of preparedness to employ diverse pedagogical approaches with specific skill sets (Marinoni et al., 2020). A key challenge underscored by many researchers in this post-pandemic era is the heightened demand for specialized abilities such as advanced computer proficiency, specific communication skills tailored for online environments, adept utilization of various educational technologies, and the ability to swiftly address unique challenges during instructional sessions.

Computer literacy has become increasingly important in the context of graduate employability in Cameroon and many other parts of the world. The integration of technology into various sectors means that employers are increasingly looking for candidates with strong computer skills. Many industries in Cameroon are digitizing their operations, which requires employees to be proficient in basic computer skills as well as specialized software related to their fields. Sectors such as banking, telecommunications, education, and healthcare are experiencing growth due to technological advancements, increasing the demand for graduates with computer literacy. Many universities and vocational institutions in Cameroon are starting to incorporate computer literacy into their curricula. However, there are still gaps in the training related to emerging technologies like data

analytics, cybersecurity, and software development. Many students face financial barriers that can limit their access to technology and effective training programs. The Cameroonian government and various

NGOs are working to improve ICT education and infrastructure, promoting computer literacy as part of broader educational reforms. Initiatives aimed at enhancing digital skills among youth are emerging, including workshops and community centers that provide access to technology and training. Alongside technical skills, employers also value soft skills such as communication, teamwork, problem-solving, and adaptability. Computer literacy can significantly enhance these skills in a digital workplace.

This research was carried out in Yaounde and at the National Employment Fund (NEF) in Cameroon. The NEF was created by presidential decree on April 27, 1990. It has one general branch (Direction Générale in Yaounde), ten (10) regional branches, and six (06) local branches all over the national territory in Cameroon. It is a public employment service that aims to promote employment.

With that said, the question that looms is, how prepared are graduates to embrace computer literacy to enable them to find jobs after graduation? This study falls within the confines of digitalization in Education, specifically computer literacy. The overall objective is to analyze the relationship between computer literacy and graduate employability. More specifically, the study aims to:
- Examine the relationship between basic computer skills and graduate employability.
- Explore the connection between digital communication skills and graduate employability.
- Determine whether information literacy is related to graduate employability.
- Investigate the relationship between creative /multimedia skills and graduate employability.

The present study is worthwhile, given that it throws light on the current digitalization in education stalemate and presents proposed measures that can help promote employment of graduates in our changing times.

CONTEXT
The utilization of innovations such as the computer has become a vital piece of contemporary life and has directly influenced instruction, amusement, and work (Huffman, 2012). Computer education has therefore been perceived to be accessible for graduates as it not only guides the learning interaction, but it equally gives graduates the mentalities that will be needed in their future work life (Tewri, Mtose & IIesanmi, 2018). Ogbuiyi (2015) mentions that computer skills are the information and capacity an individual needs to utilize computers and innovation effectively.

According to Reynolds (2007), computer literacy entails possessing knowledge about the functionalities of hardware and software, as well as comprehending how computers and the internet can

enrich educational experiences. However, not all students can benefit from enhanced education experiences due to the digital disparity that impedes

Universal access to computers. This discrepancy between those who have the means to access computers and the internet and those who do not stems from various obstacles, including socioeconomic disparities among consumers, exorbitant technology access expenses, and intricate system interfaces. Computer literacy stands as a vital skill to incorporate into the contemporary knowledge-based society. This proficiency encompasses the acquisition of knowledge, skills, and behaviors necessary for the efficient utilization of digital devices like smartphones, tablets, desktops, and laptops in collaborative and communicative endeavors. In this digital age, digital competencies assume the role of indispensable lifelong skills that empower individuals to engage in online communities and social networks while adhering to behavioral norms. Moreover, individuals with these competencies can assess information, conduct logical analyses, and generate value-added solutions (Abas et al., 2019).

Winter, Chudoba & Gutek (1997) posited that the acquisition of computer knowledge is attainable through formal education, yet the responsibility for updating such knowledge often falls on organizations rather than higher learning institutions. However, it is imperative to recognize that not all experiences carry equal weight in enhancing computer literacy and academic performance. Engaging in activities like digital communication, information literacy, coding, software development, and multimedia skill development can markedly elevate students' proficiency in specific computer skills. These hands-on experiences allow students to apply theoretical knowledge in practical settings, thereby deepening their comprehension and mastery of computer concepts. On the other hand, simply using computers for basic tasks like word processing or internet browsing may not necessarily lead to a substantial improvement in computer literacy levels. While these activities are valuable for everyday use, they may not provide the depth of knowledge required to excel in more advanced computer-related tasks. Therefore, it is essential for educators to design learning experiences that are not only diverse but also tailored to develop the specific computer skills needed in a particular context. By doing so, students can build a solid foundation in computer literacy that translates into improved performance in academic and professional settings.

Wallace & Clariana (2005) mention that students are expected to embrace all computer-based innovations in their daily lives to complete all kinds of tasks. Higher education institutions need to review their curriculum to ensure that students are offered degrees that will equip them well for life in a world of fast-paced technological change (Recker & Alter, 2012).

Many of these innovations reflect growing concern for information technology and computer-related technologies (Miliszewska, Venables, & Tan, 2010). Jury (1999) made the assertion that computer literacy education is a need that resulted from the economic, social, and political pressures that continuously increase. Consequently, it is in the best interest of all companies and employers to maintain a computer-literate workforce as workers will become more productive and achieve the set target at the end of the day, and they will also assume new roles during their tenure at organizations (Winter, Chudoba & Gutek, 1997).

For a considerable period, the realm of higher education has been actively engaged in the implementation of leading-edge technological advancements and more efficient methodologies. The primary objective behind these endeavors is to boost overall effectiveness and nurture a group of graduates who are well-equipped with modern skills to navigate the constantly evolving changes of the labor market and skillfully respond to the pervasive impacts of globalization. Belt and Richardson (2005) in their research work came out with the conclusion that employees are increasingly expected to possess both soft and technical skills, and to recognize this diversification in the market.

Graduates with advanced computer literacy levels demonstrate proficiency in utilizing their computers in sophisticated ways, making them highly sought after in the job market (McGrath, 1990). Conversely, a lack of computer literacy results in the underutilization of equipment, leading to sub-optimal outcomes and diminishing the employability of individuals. Andersen (1990) posited that employers value computer-literate workers due to their ability to apply both concrete and abstract computer knowledge effectively in various contexts.

METHODOLOGY
This study adopted the correlational research design.

• The population
The study population is uniquely comprised of graduates in search of jobs at the National Employment Fund (NEF) office in Cameroon. The NEF was chosen because it is a place where graduates go in search of jobs after graduation.

• Sample size
We had a total of 532 graduates. This Sample Size was determined using the Krejcie and Morgan Table of sample determination.

• Instruments of data collection
Questionnaires were used to collect data from graduates. The questionnaires were comprised of eighteen (18) items, designed following Liquet's five-unit scale (Strongly Agree, Agree, Uncertain, Disagree, and Strongly Disagree). This technique helped us to determine graduates' level of agreement, disagreement, and uncertainty on the different items related to the degree of their computer literacy predisposition, and the issue of graduates' employability in higher education in Cameroon.

• Method of data analysis
The inferential statistical approach was used in data analysis, and Spearman's Correlation Index was used to test research hypotheses. To analyze complex inter-relationships between observed and latent variables (constructs), the Partial Least Squares Structural Equation Modeling (PLS-SEM) was used. The Research hypotheses were based on: There is a relationship between computer literacy and graduates' employability in Cameroon.

Analyses were done thanks to the Statistical Package for Social Sciences (SPSS). Inferential statistics thus helped us to determine the nature of correlation, and the magnitude of Computer literacy and graduates' employability in Cameroon. Discussion of results was biffed up by The theory of connectivism by George S. and Stephen D. (2005) it seeks to be a modern day solution as it builds on the idea that technology has increased the speed of our access to information, and our constant connectedness should be harnessed to help students make choices about learning, collaborating, and learning from diverse sources. This theory is relevant for this study because the issue under study has to do with graduates acquiring computer literacy skills, which will help them get jobs after graduating considering the fact that many companies today want to employ graduates who are computer literate.

RESULTS
Here, Analyses are made in two ways: descriptively and Inferentially:

A. Descriptive analyses are concerned with graduates' demographic information, employment status, professional experience, institutions attended, and computer literacy as seen in the tables below:

TABLE 1: Graduate's demographic information.

Modalities	Frequency	Percentage
Age range		
21-25years	143	26,9
26-30years	126	23,7
31-35years	98	18,4
36-40 years	97	18,2
> 40 years	68	12,8
Gender		
Male	224	42,1
Female	308	57,9

Source: Field data (2024).

The whole study was made up of 532 respondents, ranging from 21-40 years and above, making up a percentage of 100. The highest population in the study came from the age range of 21-30 years. This implies that the incidence of unemployment is highest among youths in Cameroon. Item two presents the distribution of respondents according

to gender. 224 respondents were male, while 308 were female. This could be explained by the fact that female graduates are more challenged by unemployment than males.

TABLE 2: Employment status and professional experience.

Modalities	Frequency	Percentage
Employment status		
Employed	82	15.4
Unemployed	364	68.5
Underemployed	86	16.1
Professional experience		
Less than 5 years	79	46.6
5 to 10 years	54	33
10 years and above	36	21.4

Source: Field data (2024).

Table 2 shows that the employment status of the respondents was 364 out of 532 were unemployed, 82 were gainfully employed, and 86 respondents were underemployed. This only explains the fact that the incidence of unemployment in Cameroon is serious, since under-employment is itself a form of unemployment.

Also, the distribution according to the professional experience of employed respondents was 79 out of 169 of the working group had only worked for less than five years. This explains the youthfulness of the respondents and that they might just be in their first job after university. 54 have worked for 5-10 years, while only 36 have been working for 10 years

and above. This could be suggestive of the fact that they keep losing their jobs and need to look for new ones.

TABLE 3: Institutions attended.

Modalities	Frequency	Percentage
University Attended		
Siantou University Campus	40	7,5
The University of Yaounde I	201	37,8
The University of Yaounde II	102	19,2
The University of Ngoundere	33	6,2
The University of Dschang	42	7,9
The University of Douala	27	5
Institut Africaine d'informatique	30	5,6
Catholic University of Central Africa	46	8,6
University of Buea	12	2,2

Source: Field data (2024).

Here, the table presents the different universities attended by graduates. The University of Yaounde I produces the highest number of unemployed graduates, and this can be explained by the fact that its population is high, and because the city of Yaounde has the highest unemployed graduates in Cameroon.

TABLE 4: Computer Literacy.

Item	Statement		SA	A	Un	DA	SDA	Mean
1	I use a computer for PowerPoint presentations in class.	*f1*	93	230	145	21	43	2,45
		%	17,5	43,2	27,3	3,9	8,1	
2	Computer literacy skills are important for graduate employability.	*f1*	95	208	165	---	64	2,53
		%	17,9	39,1	31,0	---	12,0	
3	The acquisition of computer skills has emerged as a critical factor in enhancing graduate employability.	*f1*	62	113	232	61	64	2,93
		%	11,7	21,2	43,6	11,5	12,0	
4	Computer literacy is essential for individuals looking to start their businesses.	*f1*	96	143	211	61	21	2,60
		%	18,0	26,9	39.7	11,5	3,9	
5	Many high-demand jobs require computer literacy as a core skill.	*f1*	103	262	85	61	21	2,32
		%	19,4	49,2	16,0	11,5	3,9	
6	Graduate Proficiency in computer software/other digital platforms has a competitive advantage in the job market.	*f1*	209	178	42	61	42	2,16
		%	39,2	33,4	7,9	11,4	7,9	
7	A graduate who possesses computer skills succeeds in a job market that relies on digital tools.	*f1*	21	33	122	229	127	2,19
		%	3,9	6,2	22,9	43,0	23,9	
8	Computer proficiency answers the questions of university performance.	*f1*	37	---	330	64	101	3,12
		%	7,0	---	62,0	12,0	19,0	
9	Proficiency in computers within my institution leads interdependence to merger and growth	*f1*	55	19	148	188	122	2,83
		%	12,2	3,6	27,8	35,3	22,9	
10	I have knowledge of basic computer skills to improve tasks and activities for effective management of HE.	*f1*	42	56	64	188	182	3,83
		%	7,9	10,5	12,0	35,3	34,6	

Item	Statement		SA	A	Un	DA	SDA	Mean
11	I enjoy using a computer to enhance outcomes.	*f1*	33	64	146	127	162	3,66
		%	6,2	12,0	27,4	23,9	30,4	
12	I feel comfortable using a computer to work.	*f1*	95	42	105	103	187	3,52
		%	17,9	7,9	19,7	19,3	35,1	
13	I understand the technical aspects of computers.	*f1*	26	69	149	56	232	2,61
		%	4,9	13,0	28,0	10,5	43,6	
14	It is important for me to learn how to use a computer because it increases organizational performance.	*f1*	69	24	143	215	81	2,66
		%	13,0	4,5	26,9	40,4	15,2	
15	I think using a computer in the office improves workflow.	*f1*	59	131	227	39	76	2,91
		%	11,0	24,6	42,7	7,3	14,2	
16	I will be willing to invest additional time in training to learn how to use a new personal computer.	*f1*	89	55	242	109	37	2,74
		%	16,7	10,3	45,4	20,4	7,0	
17	I have a working knowledge of computer terminology.	*f1*	36	55	154	80	207	2,49
		%	6,8	10,3	29,0	15,0	38,9	
18	I use the computer for word processing, creating spreadsheets, and presentations.	*f1*	53	58	74	184	162	2,30
		%	10,0	10,9	13,9	34,6	30,4	

Source: Field statistics (2024).

B. Inferential statistics

TABLE 5: Correlation Table of computer literacy and graduates' employability.

Correlations			
		Computer Literacy	**Graduates` Employability**
Spearman's rho	*Computer Literacy*		
	Correlation Coefficient	1,000	,721**
	Sig. (2-tailed)	.	,000
	N	532	532
	Graduates` Employability		
	Correlation Coefficient	,721**	1,000
	Sig. (2-tailed)	,000	.
	N	532	532

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation table above reveals that the relationship between computer literacy and graduates' employability is positively significant. This is based on the fact that the level of significance is 0.000, thus less than 0.05, which is the alpha (standard error margin). Alternatively, the correlation coefficient (0,721) is a positive value and is situated within the normal range. It is high and close to 1, indicating that there is a strong link between computer literacy and graduates' employability. The results reveal that we have no chance of making an error if we accept that the association between the variables exists. We can therefore conclude that computer literacy has a significant relationship with graduates' employability in Cameroon.

DISCUSSION OF FINDINGS
Looking at the results, it indicates that there exists a significant relationship between computer literacy and graduates' employability in Cameroon. In other words, an improvement in computer literacy will increase the chances of graduates' employability in Cameroon. Computer literacy was substantiated using basic computer skills, information skills, data literacy skills, tech savviness, and multimedia skills. The results obtained confirm the relationship that exists between computer literacy and graduates' employability. Knowing basic computer skills will upskill graduates and impact in them computer literacy skills, which is one of the intentions of this study. These results are accepted from the statistics shown and their fitness from other researchers. Among the several researchers we studied, we took note of the relationship our results have with some, like Bello et al. (2023), which shows that the lack of accessibility to computers and other ICT resources to students in universities poses a difficult barrier towards acquiring the necessary computer skills and knowledge needed by employers. Zhou & Alias (2024) emphasize more on the integration of computer technologies in the learning process as a means of improving the quality of education and forming key competencies in students. Daniel A. & Adetimirin's work, which is based on the Influence of Computer Literacy (2015), recommends that the computer literacy of Nigerian postgraduates should be improved by incorporating it into their curriculum in order to equip them for the world of work.

Computer literacy in Cameroon, as in many other countries, is becoming increasingly important due to the worldwide use of technology in various aspects of daily life and work. Improving computer literacy boosts entrepreneurship opportunities and employment prospects for individuals in Cameroon. In Cameroon, efforts are being made to enhance graduates' employability, and one of them is by improving computer literacy among the population, in urban and rural areas, and among the younger generation. Many efforts have been put in place for the integration of computer literacy into the formal education system in Cameroon. Yet, there is no standardized curriculum that includes digital skills training, which has made it difficult for students to receive consistent and comprehensive computer literacy education.

Cameroon graduates still lack computer literacy because of the resistance from traditional education systems, cultural norms, and bureaucratic structures, which have hindered the adoption of computer literacy programs. Efforts have been put in place to address these challenges, which include public-private partnerships, investment in infrastructure, training of educators, curriculum development and innovation, and awareness campaigns to promote the importance of computer literacy in Cameroon.

The digital divide, as well as disparities in access to technology between urban and rural areas, is also another challenge to implementing computer literacy in Cameroon. Many areas in Cameroon lack adequate infrastructure, such as a stable electricity supply, internet connectivity, and access to computers. Without these basic infrastructure components, it becomes challenging to introduce computer literacy programs effectively. Even in areas with infrastructure, there may be a lack of access to computers and other necessary technology. This can make it difficult for individuals, especially those in rural areas, to gain hands-on experience with computers and develop digital skills.

The applicability of the theory of connectivism in Cameroon universities is a big step toward fighting unemployment. The main aim behind connectivism is for students to enhance their knowledge with various thoughts and learn to collaborate with their peers. When they work together, they benefit each other by sharing their ideas and offering solutions to common day-to-day problems. Also, with group work, which involves students stepping into the teaching role, they develop important social skills and competencies that match 21st-century skills that are useful in their future careers and increase their chances of employment. This theory is also significant to this study as it points out that the rapid and continuous growth in the digital technology requires graduates to have the necessary skills and competencies to perform tasks and solve problems in digital environments connectivism can help bridge the gap between academia and industry by emphasizing the development of key employability skills like communication, collaboration, adaptability, and digital literacy. By integrating connectivist principles into their programs, universities can better equip learners for the demands of the modern workforce and improve their job prospects upon graduation. For instance, communication skills are important in various work environments, whether it's efficiently conveying ideas in a team meeting or presenting findings to clients. By honing their communication abilities through practical exercises and real-world simulations, students can become adept at articulating their ideas clearly and convincingly. For instance, communication skills are very much vital in different professional settings, whether it's effectively communicating concepts in a team meeting or presenting findings to clients.

The transformation model expatriates on the idea of computer literacy and graduates' employability. The model emphasizes adaptability to changing environments and technologies. Graduates who are digitally literate quickly adapt to new technologies and workflows within higher education institutions, making them more versatile and valuable employees. Computer literacy enables graduates to work more efficiently and creatively. They can leverage digital tools to streamline processes, enhance communication, and develop innovative solutions. The result gives the researcher and every educational stakeholder the confidence to agree that the unemployed graduates from Cameroon universities may be among the perpetrators of the recurrent crimes in the society of Cameroon, out of frustration. In the same light, the results obtained from our study further corroborate the views of both the state and individuals on the graduates' employability crisis.

RECOMMENDATIONS
All university institutes in Cameroon should adopt a digitalization program that suits their institution. Embracing digitalization in the educational sector has become increasingly crucial for universities to stay competitive in the modern world. By implementing a digitalization program, universities will streamline their administrative processes, enhance the learning experience for students, and improve overall efficiency. Unemployed graduates should enroll in digital skills-enhancing programs in order to acquire more timely skills to increase their chances of employment. Lastly, the Minister in charge of higher education should provide instructors with modern technological tools such as laptops, computers, video projectors, interactive whiteboards, and free broadband high-speed internet connection to cover all amphitheaters.

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