



A Survey of ICT Competencies among students in the Faculty of Commerce at the University of Zimbabwe, Harare, Zimbabwe

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ABSTRACT

The purpose of this study was to analyse the pattern of ICT usage habits and perceived competency possessed by undergraduate students in the faculty of commerce at the University of Zimbabwe. It was also imperative to address the issue of whether there were important differences in the perceived ICT competency among students depending on demographic and study related factors. Overall, a significant difference was established between male and female students ICT perceived competencies. Furthermore there is also a need to formalise the training of ICT. This underscores the need to improve the ICT training of undergraduates at the university.

Keyword: *ICT competence; Gender and ICT; ICT usage*

INTRODUCTION

Technology-driven communication has transformed the earth into a large global connected community with ever-increasing spread of information and communication technology (ICT). Indeed, the commonality, rapid and continuous innovation of information and communication technologies (ICTs) has revolutionised human society catapulting it from the information age to the age of knowledge (Gaibreath, 2000). In this context, ICT is the range of technologies that are employed in the collecting, storing, editing, retrieving, and transference of information (Olakulehin, 2007). Information and Communication Technology (ICT) is defined as computer based tools of people who work with the information and communication processing needs of an organisation (Onasanya, 2009).

The purpose of this study was to analyse the pattern of ICT usage habits and perceived competency possessed by undergraduate students in the faculty of commerce at the University of Zimbabwe. It was also imperative to address the issue of whether there were important differences in the perceived ICT competency among students depending on their demographic and study related factors. Therefore, the paper has the following objectives:

- To determine the ICT usage habit of students in the faculty of commerce
- To investigate the perceived ICT competencies of students in the faculty of commerce
- To test for any significant differences in perceived ICT competencies among students in the faculty of commerce depending on the demographic and study related factors such as gender, academic year/level and type of computer training.

The rest of this study is structured as follows. Section 2 presents the literature review. Section 3 outlines the methodology of the study. Section 4 highlights the findings of the study while, section 5 concludes and makes recommendations.

Literature Review

ICT has enhanced the process of communication between lecturers and students as well as the interaction between different educational resources thereby enriching learning. In this regard, Oliver, (2002) avers that the utilisation of ICT in tertiary education improves student-centred learning.

One of the major teaching challenges, in the field of commerce has really been about bridging the gap between knowledge and industry practice. This is so because professional knowledge is constantly being renewed and recreated through industrial practice.

Zimbabwe does not appear to have a national policy on ICT education. It does however, have a Zimbabwe ICT Strategic Plan 2010-2014 which defines ICT as “the use of computers, telecommunications, office systems and technologies for the collection, processing, storing, packaging and dissemination of information.” As part of its quick win strategy, the document has as one of its goals the availing of one pc per classroom.

Clearly, a key component of spreading ICT skills is the preparation of teachers with the requisite skills to prepare students with the relevant skills to enable them to contribute meaningfully in academia and the economy.

Gender and ICT

Research studies report the significance of gender differences in ICT competencies among students. For instance, Oliver's (1993) study investigated gender disparities in ICT skills of upper primary and lower secondary school students in Western Australia. The findings of the study showed significant differences among primary school pupils on the one hand. On the other hand, there were fewer gender differences among secondary school students. Danner and Pessu (2009) investigated competencies among students at University of Benin, Benin City, Nigeria. They found that there was no statistically significant effect of gender on student's perceived ICT competencies scores. Furthermore, although the perceived mean ICT competencies for males was higher than that of females, however, the difference was not sufficient enough to conclude that males perceive themselves to be more competent ICT users than the females (Danner and Pesu (2009).

METHODOLOGY

Research Design

The descriptive survey method was selected to determine ICT usage habits, perceived ICT competency, and related issues of undergraduate students in the faculty of commerce. This would enable the researcher determine the attitude of the students. Attitude in this regard refers to a positive or negative judgement about a specific subject. In turn attitudes are revealed through analysis of the information pertaining to the result of an action and by the subsequent positive or negation evaluation of those results (Ajzen and Fishbein, 1980; Danner, and Pessu, 2009; Yusuf and Balogun, 2011).

Population and Sample for the Study

The study has as its target population all undergraduate students in the faculty of commerce comprising three departments, at the University of Zimbabwe. From this population of 1500 students, a sample of 180 undergraduate students was drawn from the Business Studies, Tourism and accountancy departments.

Research Instrument

The research instrument for this study was a survey questionnaire. The questionnaire was adapted from Danner and Pessu (2009). The questionnaire was administered over a one week period between 02nd and 09th of April 2014.

Reliability and validity of data

The reliability of the research instrument as well as the validity of the data was tested using the Cronbach alpha formula.

RESULTS

The research findings are presented in accordance with the three sub-sections corresponding to the three research objectives presented in section 1 of this paper. The questionnaire was distributed as follow: Bachelor of Business Studies Computing Technology, 14; Banking and Finance, 16; Accounting, 48; Tourism; 34; Marketing, 20 and Management, 12. The response rate was 76 per cent i.e. 137 respondents completed and returned the questionnaire.

Table 1: Cronbach alpha

Cronbach's Alpha	N of Items
,832	33

Demographic profile of respondents (Table 2 below) presents the demographic profile of the respondents. It depicts the majority of respondents as being male at 59.9 per cent. This is generally in keeping with general statistics pertaining to male/female ratios on campus (This is contrary to the findings of Danner and Pessu (2009)). However, this also demonstrates that both male and female students were fairly represented. The distribution of respondents in the various

programmes was as follows, Bachelor of Business Studies and Computing Science (BBSCT) 8.2 per cent, Banking finance 22.4 per cent, Marketing 7.5 per cent, Management 15.7 per cent, Tourism 20.1 per cent and Accounting 26.1 per cent. This also shows that all departments were fairly represented. Respondent's age range fell within the 21-25 year band. This is in keeping with the findings of Danner and Pessu (2009).

Table 2: (a) Demographic profile of respondents: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	82	59,9	59,9	59,9
	Female	55	40,1	40,1	100,0
	Total	137	100,0	100,0	

Table 2: (b) Demographic profile of respondents: Programme

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BBSCT	11	8,0	8,2	8,2
	Banking & Finance	30	21,9	22,4	30,6
	Marketing	10	7,3	7,5	38,1
	Management	21	15,3	15,7	53,7
	Tourism/Hospitality	27	19,7	20,1	73,9
	Accounting	35	25,5	26,1	100,0
	Total	134	97,8	100,0	
Missing	System	3	2,2		
Total		137	100,0		

Table 2: (c) Demographic profile of respondents: Age range

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	16-20 Years	2	1,5	1,5	1,5
	21-25 Years	114	83,2	83,8	85,3
	26-30 Years	12	8,8	8,8	94,1
	>30 Years	8	5,8	5,9	100,0
	Total	136	99,3	100,0	
Missing	System	1	,7		
Total		137	100,0		

ICT Usage habits among students

Descriptive profile of respondents (Table 3 below) portrays the descriptive profile of the respondent's ICT usage habits. The table indicates that 99.3 per cent of the students were computer literate in contrast to 0.7 per cent who were not. On one hand, of the 99.3 per cent who were computer literate, 38.5 per cent had non-formal computer training and 3.0 per cent had none. On the other hand, 48.1 had formal training. Only 9.6 per cent had ICDL training. Further analysis of

the data revealed that 62.5 per cent had computer use greater than four years. Moreover, 93.3 professed to have access to internet use. With regard to the frequency of internet use, 61.5 per cent had daily use, 20.7 per cent had use several times a week, while 17.8 per cent said many times a week. Finally, the frequency of email use also provided some useful insight, 40.9 per cent had daily use, 35.9 per cent had weekly use, and 10.9 per cent had monthly use while 10.9 used email a few times a year.

Table 3: (a) Descriptive profile of respondents ICT Usage Habits: Are you Computer Literate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	135	98,5	99,3	99,3
	No	1	,7	,7	100,0
	Total	136	99,3	100,0	
Missing	System	1	,7		
Total		137	100,0		

Table 3: (b) Descriptive profile of respondents ICT Usage Habits: Computer training

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ICDL Training	13	9,5	9,6	9,6
	Formal Training	65	47,4	48,1	57,8
	Non-Formal Training	52	38,0	38,5	96,3
	None	4	2,9	3,0	99,3
	23	1	,7	,7	100,0
	Total	135	98,5	100,0	
Missing	System	2	1,5		
Total		137	100,0		

Table 3: (c) Descriptive profile of respondents ICT Usage Habits: Years of Computer Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	> 1 Year	1	,7	,7	,7
	1-2 Years	13	9,5	9,6	10,3
	3-4 Years	37	27,0	27,2	37,5
	>4 Years	85	62,0	62,5	100,0
	Total	136	99,3	100,0	
Missing	System	1	,7		
Total		137	100,0		

Table 3: (d) Descriptive profile of respondents ICT Usage Habits: Do you have Access to Internet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	126	92,0	93,3	93,3
	No	9	6,6	6,7	100,0
	Total	135	98,5	100,0	
Missing	System	2	1,5		
Total		137	100,0		

Table 3: (e) Descriptive profile of respondents ICT Usage Habits: Preferred type of Computer to Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Desktop	3	2,2	2,2	2,2
	Laptop	129	94,2	96,3	98,5
	12	2	1,5	1,5	100,0
	Total	134	97,8	100,0	
Missing	System	3	2,2		
Total		137	100,0		

Table 3: (f) Descriptive profile of respondents ICT Usage Habits:Type of Computer Frequently

		Frequency	Percent	Valid Percent	Cumulative Percent
Used					
Valid	Desktop	17	12,4	12,6	12,6
	Laptop	116	84,7	85,9	98,5
	12	2	1,5	1,5	100,0
	Total	135	98,5	100,0	
Missing	System	2	1,5		
Total		137	100,0		

Table 3: (g) Descriptive profile of respondents ICT Usage Habits: Frequency of Internet Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Many times a week	24	17,5	17,8	17,8
	Several Times a week	28	20,4	20,7	38,5
	Daily	83	60,6	61,5	100,0
	Total	135	98,5	100,0	
Missing	System	2	1,5		
Total		137	100,0		

Table 3: (h) Descriptive profile of respondents ICT Usage Habits: Frequency of Email Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1	,7	,7	,7
	Few times a year	15	10,9	10,9	11,7
	Monthly	15	10,9	10,9	22,6
	Weekly	49	35,8	35,8	58,4
	Daily	56	40,9	40,9	99,3
	14	1	,7	,7	100,0
	Total	137	100,0	100,0	

Perceptions of ICT Competencies of students

The respondents were asked to rate their level of competency on 5- point Likert-type scale as follows; 5 for excellent, 4 for good, 3 for fair, 2 for low capability, and 1 for no capability. Table 4 below depicts the perceived competencies of the students. On one hand, the results indicate that the students perceived themselves to be competent i.e. excellent or good in ICT applications 65.7 per cent, Word processing, 91.9 per cent, file navigation, 68.7 per cent, Internet browsing 92.6 per cent, (there is firm evidence in the literature

that internet has a huge influence on information seeking by students Armstrong et. Al., 2001 and Dadzie, 2005 and Yusuf and Balogun, 2011; to name a few). Emailing 84.3 per cent, Power Point 70.6 per cent, and Excel 68.9 per cent. On the other hand, they perceived themselves as incompetent in the following applications; Eviews only 19.7 indicated competency, Stata only 12.9 per cent indicated having competency and finally for SPSS only 20.8 indicated having competency. This is to be expected as students would not have been exposed to these packages as frequently as the others.

Table 4: (a) Perceived ICT Competencies of students: ICT Applications

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Capability	2	1,5	1,5	1,5
	Low Capability	5	3,6	3,7	5,2
	Fair	39	28,5	29,1	34,3
	Good	60	43,8	44,8	79,1
	Excellent	28	20,4	20,9	100,0
	Total	134	97,8	100,0	
Missing	System	3	2,2		
Total		137	100,0		

Table 4: (b) Perceived ICT Competencies of students: Word Processing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low Capability	2	1,5	1,5	1,5
	Fair	9	6,6	6,6	8,1
	Good	46	33,6	33,8	41,9
	Excellent	79	57,7	58,1	100,0
	Total	136	99,3	100,0	
Missing	System	1	,7		
Total		137	100,0		

Table 4: (c) Perceived ICT Competencies of students: File Navigation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Capability	4	2,9	3,1	3,1
	Low Capability	8	5,8	6,1	9,2
	Fair	29	21,2	22,1	31,3
	Good	44	32,1	33,6	64,9
	Excellent	46	33,6	35,1	100,0
	Total	131	95,6	100,0	
Missing	System	6	4,4		
Total		137	100,0		

Table 4: (d) Perceived ICT Competencies of students: Internet Browsing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Capability	1	,7	,7	,7
	Low Capability	2	1,5	1,5	2,2
	Fair	7	5,1	5,1	7,4
	Good	38	27,7	27,9	35,3
	Excellent	88	64,2	64,7	100,0
	Total	136	99,3	100,0	
Missing	System	1	,7		
Total		137	100,0		

Table 4: (e) Perceived ICT Competencies of students: E-mailing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Capability	1	,7	,7	,7
	Low Capability	2	1,5	1,5	2,2
	Fair	18	13,1	13,4	15,7
	Good	41	29,9	30,6	46,3
	Excellent	72	52,6	53,7	100,0
	Total	134	97,8	100,0	
Missing	System	3	2,2		
Total		137	100,0		

Table 4: (f) Perceived ICT Competencies of students: Power Point Presentation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low Capability	6	4,4	4,4	4,4
	Fair	34	24,8	25,0	29,4
	Good	46	33,6	33,8	63,2
	Excellent	50	36,5	36,8	100,0
	Total	136	99,3	100,0	
Missing	System	1	,7		
Total		137	100,0		

Table 4: (h) Perceived ICT Competencies of students: SPSS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Capability	23	16,8	17,7	17,7
	Low Capability	29	21,2	22,3	40,0
	Fair	51	37,2	39,2	79,2
	Good	16	11,7	12,3	91,5
	Excellent	11	8,0	8,5	100,0
	Total	130	94,9	100,0	
Missing	System	7	5,1		
Total		137	100,0		

Table 4: (i) Perceived ICT Competencies of students: E Views

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Capability	29	21,2	22,0	22,0
	Low Capability	29	21,2	22,0	43,9
	Fair	48	35,0	36,4	80,3
	Good	16	11,7	12,1	92,4
	Excellent	10	7,3	7,6	100,0
	Total	132	96,4	100,0	
Missing	System	5	3,6		
Total		137	100,0		

Table 4: (j) Perceived ICT Competencies of students: Stata

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Capability	48	35,0	36,4	36,4
	Low Capability	29	21,2	22,0	58,3
	Fair	38	27,7	28,8	87,1
	Good	10	7,3	7,6	94,7
	Excellent	7	5,1	5,3	100,0
	Total	132	96,4	100,0	
Missing	System	5	3,6		
Total		137	100,0		

The demographic and study related characteristics and their effects on students' perceived ICT Competencies

Chi- tests were conducted in relation to programme, gender and age. The descriptive statistics pertaining to these tests are as displayed in tables 5, 6 and 7 respectively.

Table 5 programme ICT applications crosstab reports that there was no statistical significance between the programme of study and perceived ICT student competencies.

Table 5: (a) Programme ICT Applications Crosstab

		ICT Applications					Total
		No Capability	Low Capability	Fair	Good	Excellent	
Programme	BBSCT	0	0	1	3	7	11
	Banking & Finance	0	0	10	16	4	30
	Marketing	0	1	4	5	0	10
	Management	0	2	8	6	4	20
	Tourism/Hospitality	1	0	7	16	3	27
	Accounting	1	2	7	13	10	33
Total		2	5	37	59	28	131

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	30.797 ^a	20	,058
Likelihood Ratio	32,855	20	,035
Linear-by-Linear Association	,977	1	,323
N of Valid Cases	131		

19 cells (63.3%) have expected count less than 5. The minimum expected count is .15.

Gender ICT applications crosstab (Table 5) indicates that Gender had a statistical significance on student perceived ICT competencies. Male students had a higher perception of their ICT competencies.

Table 5: (b) Gender ICT Applications Crosstab

		ICT Applications					Total
		No Capability	Low Capability	Fair	Good	Excellent	
Gender	Male	0	2	18	36	24	80
	Female	2	3	21	24	4	54
Total		2	5	39	60	28	134

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.622 ^a	4	,006
Likelihood Ratio	16,394	4	,003
Linear-by-Linear Association	13,604	1	,000
N of Valid Cases	134		

4 cells (40.0%) have expected count less than 5. The minimum expected count is .81.

Age ICT applications crosstab (Table 6) displays that there is no statistical relationship between age and perceived ICT competencies of students

Table 6: Age ICT Applications Crosstab

		ICT Applications					Total
		No Capability	Low Capability	Fair	Good	Excellent	
Age Range	16-20 Years	0	0	1	1	0	2
	21-25 Years	2	4	30	51	25	112
	26-30 Years	0	0	4	5	3	12
	>30 Years	0	1	3	3	0	7
Total		2	5	38	60	28	133

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.140 ^a	12	,909
Likelihood Ratio	7,872	12	,795
Linear-by-Linear Association	,998	1	,318
N of Valid Cases	133		

16 cells (80.0%) have expected count less than 5. The minimum expected count is .03.

Programme ICT training crosstab (Table 7) highlights that there is a significant statistical relationship between programme and the ICT training that students undergo.

Table 7: Programme ICT Training Crosstab

		Computer Training					Total
		ICDL Training	Formal Training	Non-Formal Training	None	23	
Programme	BBSCT	1	8	1	0	0	10
	Banking & Finance	5	13	12	0	0	30
	Marketing	0	5	5	0	0	10
	Management	0	4	17	0	0	21
	Tourism/Hospitality	3	14	9	0	0	26
	Accounting	4	20	6	4	1	35
Total		13	64	50	4	1	132

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41.964 ^a	20	,003
Likelihood Ratio	44,247	20	,001
Linear-by-Linear Association	1,813	1	,178
N of Valid Cases	132		

**22 cells (73.3%) have expected count less than 5.
The minimum expected count is .08.**

CONCLUSION

This study revealed a high level of ICT usage by faculty of commerce students. This notwithstanding the fact that 41.5 per cent of respondents had no formal computer training. Those who had training were not certified. This is of concern and reflects a need by the University to make it mandatory for students to have an International Computer Driving Licence (ICDL) for admission to first year. Furthermore, the majority of respondents indicated a weakness in data analysis software. Consideration may be considered to introduce an appreciation of these software under an appropriate induction programme presented to first years each year. The

findings pertaining to computer access reveal that ICT increases flexibility as to where learning takes place, what is learned and how it is learned. Therefore, ICT in education increases access opportunities to learning thereby increasing the quality of education by accessing different levels of knowledge and different viewpoints pertaining to that knowledge.

Limitations of the study

During the course of the study several limitations became apparent. The sample size of 180 students of the faculty of commerce may make drawing inferences pertaining to the whole faculty difficult. Thus, in interpreting the results, one

should bear in mind that the study only portrays a glimpse rather than a total picture of the ICT competencies of University of Zimbabwe students. Secondly, the determining of student perceptions as an indicator of their level of competency presents a limitation as students may be untruthful in their responses. Perhaps testing them would have been a better option. A further area of limitation is the association of respondents with a specific area of study. Therefore, in order to get a thorough understanding and insight into ICT competencies at the University of Zimbabwe is to conduct additional research on the remaining nine faculties. Moreover, comparative studies at other universities in Zimbabwe of undergraduate students or internationally would help determine whether the results of this study can be generalised across several universities.

REFERENCES

- Ajzen, I and Fishbein, M. (1980).** *Understanding Attitudes and Predicting Social Behaviour.* Englewood Cliffs, NJ: Prentice-Hall.
- Armstrong, C., Fenton, R., Lonsdale, R., Stoker, D., Thomas, R. and Urquhart, C. (2001).** A Study of the use of Electronic Information Systems by Higher Education Students in the UK, *Program*, 35 (3), 241-262.
- Dadzie, P.S. (2005).** “Electronic Resources: Access and Usage at Ashesi University College, *Campus-Wide Information Systems*, 22 (5), 290-297
- Danner, R. B. and Pessu, COA.(2009).** Ä Survey of ICT Competencies among Students in Teacher Preparation Programmes at the University of Benin, Benin City, Nigeria”*Journal of Information Technology Education: Research* (12) 33-49.
- Gaibreath, J. (2000).** Knowledge Management Technology in Education an Overview. *Educational Technology*, 40 (5), 28-33.
- Olakulehin, F.K. (2007).** Information and Communication Technologies in Teacher Training and Professional Development in Nigeria. *Turkish*

Online Journal of Distance Education, 8(1),133-142.

Oliver, R. (1993). “A Comparison of Students Information Technology Skills in 1985 and 1991.” *British Journal of Educational Technology*, 24(1), 52-62.

Oliver, R. (2002). “The Role of ICT in Higher Education for the 21st Century: ICT as a change Agent for education” Retrieved 19 April 2014 from www.bhs-ict.pbworks.com/f/role%2520of%2520ict.pdf

Onasanya, S.A. (2009). Innovations in Teaching/ Learning V: Information and Communication Technology (ICT) in Education. Retrieved 19 April 2009 from www.unilorin.edu.ng/publications/onasanya/ICT%20in%20Edu.pdf.

Yusuf, MO and Balogun, M.R. (2011). “Student-Teachers ‘Competence and Attitude towards Information and Communication Technology: A case Study in a Nigerian University” *Contemporary Educational Technology* 2(1), 18-36

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