Full Length Research Paper

Training needs analysis of lecturers for information and communication technology (ICT) skills enhancement in Faculty of Agriculture, University of Nigeria, Nsukka

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Despite coming of age with the internet and other technology, many university lecturers lack the information and communication technology (ICT) literacy skills necessary to navigate and use the overabundance of information available today. This paper assesses the ICT skills and the areas of ICT training needs to improve teaching and research of lecturers in the faculty of agriculture, University of Nigeria, Nsukka. Data for the study were collected from 66 out of 104 academic staff of the faculty through the use of questionnaire. Data were analyzed using percentage, mean statistic and charts. The results of the study revealed that, lecturers were skilled in general windows operation (M = 1.79), word processing (M = 1.81) and internet/on-line activities (M = 1.74). They were not skilled in slides preparation/presentation (M = 1.15), spreadsheets preparation (M = 1.26), and data analysis using computer software (M = 0.84). The highest demand for ICT training need by the lecturers was data analysis using computer software like SPSS, GENSTAT, Excel, E-view etc (95.0%). The study therefore, recommended that academic staff of the faculty should be exposed to ICT training to enhance teaching and research in the university.

Key words: Training needs, lecturers, information and communication technology (ICT) skills, faculty of agriculture, University of Nigeria.

INTRODUCTION

Information communication technology (ICT) is increasingly becoming more wide spread throughout university education worldwide. This is in line with UNESCO's policy paper for change and development in higher education which urges higher education institutions to make greater use of the advantages offered by the advancement of communication technology to improve the provision and quality of their education (Chitanana et al., 2008). It is difficult and may be even impossible to imagine future learning environments that are not supported, in one way or another, by Information and Communication Technologies (ICT). When looking at the current widespread diffusion and use of ICT in modern societies, especially by the young – the so-called

digital generation – then it should be clear that ICT will affect the complete learning process today and in the future (Yves et al., 2006). ICT has been proven to be a very important aspect of the teaching learning process.

According to Walter et al. (1996), the quality of teaching depends on the quality of the teachers/lecturers which, in turn, depends to some extent on the quality of their professional development. Without well trained, qualified and committed teachers, it is impossible to deliver effectively functioning educational systems (Unwin, 2005). In fact, to meet the challenges of globalization, lecturers are required to gain the necessary skills and knowledge. As Smaldino et al., (2008) stated, the teacher in tomorrow's classrooms needs to exemplify willingness to explore and discover new technological capabilities that enhance and expand learning experiences. In this regards, professional development programmes for teachers have always been essentially important. In future, the role of lecturers will still result in improved

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student learning, but will require them to have broader capabilities than content, knowledge and pedagogy skills. The lecturers will need to be technologically competent and information-literate (Smaldino et al., 2008).

Mitchell (1993) described needs analysis as an examination of the existing need for training within an organization. It identifies performance areas or programmes within an organization where training should be applied. Needs Assessment is the process of evaluating the organization, individual employees, and employees' tasks to determine what kinds of training, if any, are necessary (Noe et al., 2009). The concept 'needs assessment' can also be referred to as the process used to determine if training is necessary (Noe, 2000).

Knowing the difference between where lecturers are now and where they want to be plays an important role in determining the contents of a training programme. Applying need analysis before a lecturer-training programme defines fields in which they need to develop their skills. This also provides a baseline against which the training accomplishment can be measured. Needs analysis begins with problem identification and definition. It is believed that a main step in any training programme is to determine whether training is needed and, if so, to specify what that training should provide. Training needs are skills, knowledge and attitudes an individual requires in order to overcome problem as well as to avoid creating problem situations (Hosein, 2008).

Although lecturers in tertiary institutions consider themselves to be knowledgeable and confident, due to the new expectations and challenges, they have a perception of a gap between their current knowledge and what they need to know to enhance their research and teaching. Training therefore became inevitable, training is generally seen to be a good thing; it is not too easy to send someone on an expensive ICT training course without being sure that the course is worthwhile, or even that it is the right course for the person. Before this is done, it is quite important to take into account the lecturers' own perceptions about the areas in which they feel proficient, those in which they feel there is need to be trained and those areas in which they have deficiencies but they are completely unaware of them. This process should be based on a well-designed needs analysis phase. A needs analysis may identify more than one training need. These needs should be prioritized, and either placed into a formal training plan, or prepare a database for future training. Hence, the need to identify the ICT training needs required of the lecturers in Faculty of Agriculture, University of Nigeria, Nsukka for effective teaching and research.

Objectives of the study

The broad objective of the study was to assess the ICT training needs of lecturers in Faculty of Agriculture, University of Nigeria, Nsukka. Specifically, the study sought to:

1. Ascertain the level of computer skills of the lecturers in word processing, spread sheet and slides preparation;
2. Ascertain the internet and on-line activities skills of the respondents;
3. Determine the level of data input and analysis skills possessed by the lecturer
4. Identify areas of training needs of the lecturers for ICT enhancement; and
5. Determine the perceived problems associated with the use of ICT to improve teaching and research in the faculty.

RESEARCH DESIGN AND METHODOLOGY

The study was carried out in Faculty of Agriculture, University of Nigeria, Nsukka, Enugu State, Nigeria. The university was founded in October 1960, as the first ever land-grant institution of higher education in Nigeria. Ever since, the Faculty of Agriculture has enjoyed a premier position in the university as one of the leading centers of teaching and research in agriculture in Nigeria. All academic staff in the faculty constituted the population for this study. All the seven Departments (Agricultural Economics, Agricultural Extension, Animal Science, Crop Science, Soil Science, Home Science and Food Science and Technology) in the Faculty participated in the study. Data for the study were collected from the respondents in 2010 through the use of questionnaire. The questionnaire contained relevant questions based on each of the objectives of the study. All the 105 academic staff of the faculty were given the questionnaire but only 66 (62.8%) correctly filled and completed copies of questionnaire were used for the study.

To ascertain the various skills of lecturers in ICT, a list of possible ICT skills (general windows; printers and other peripherals; word processing; slides preparation; excel; internet and on-line activities; and data analysis using computer software) were provided on a 4 point Likert type scale (No skill at all = 0; low skill = 1; skilled = 2; very skilled = 3) for them to tick from. The values on the Likert type scale were added to obtain 6 and divided by 4 to obtain a mean score of 1.5. Any variable with a mean score equal or higher than 1.5 was perceived as skilled, while variable with a mean score of less than 1.5 was regarded as not skilled. Chart, percentage and mean statistic were used to analyze the data. Statistical Package for Social Science (SPSS), version 11, was the package used for the data analysis.

RESULTS AND DISCUSSION

Personal characteristic of the lecturers

Figure 1 shows that majority of the lecturers (51.5%) were male, while the remaining 48.5% were female. Figure 2 shows that higher proportions (42.4%) of the lecturers were between 41 and 50 years, while 25.8% were within 31 and 40 years. Those that fell within the age range of 51 years and above accounted for 16.7%. The remaining 15.2% of the lecturers were 30 years and below. This distribution pattern suggested that majority of the lecturers are matured in age. As such, they should be
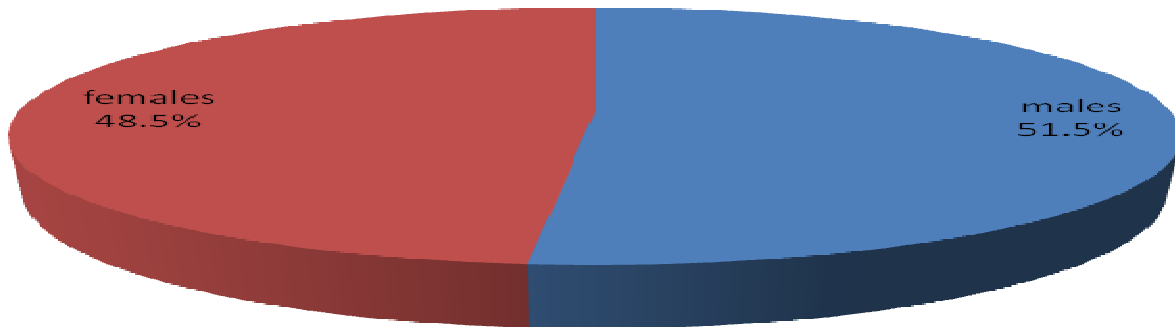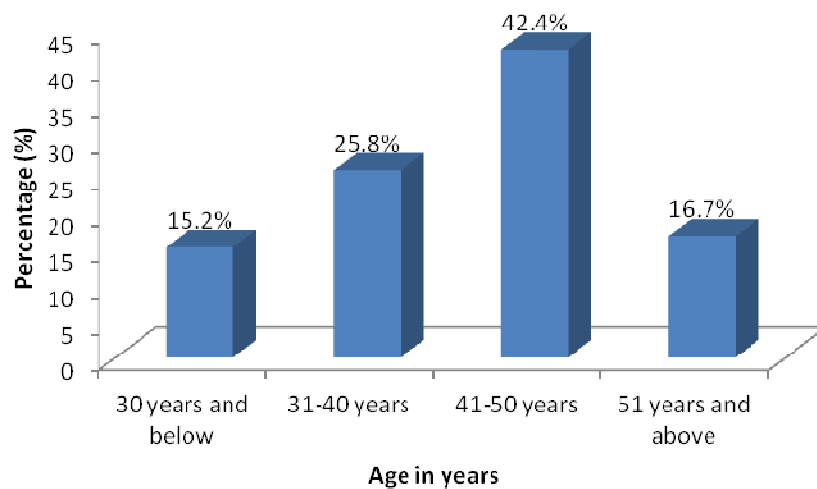
Figure 1. Sex of the lecturers.
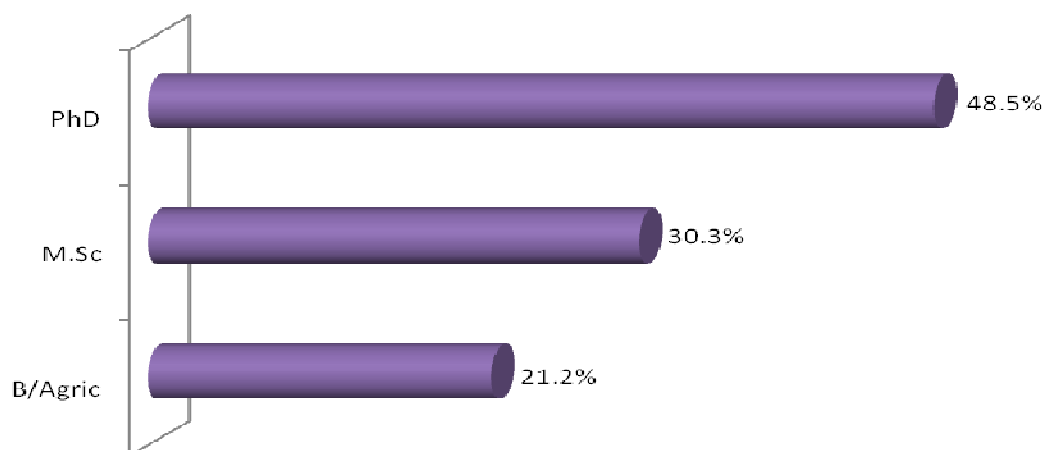

Figure 2. Age of the lecturers.

Figure 3. Educational qualification of the lecturers.

able to take rational decisions in improving teaching and research in the faculty. Figure 3 shows that higher proportions (48.5%) of the lecturers had Ph.D degree.

About 30% and 21% of them had M.Sc and B.Agric degrees, respectively.

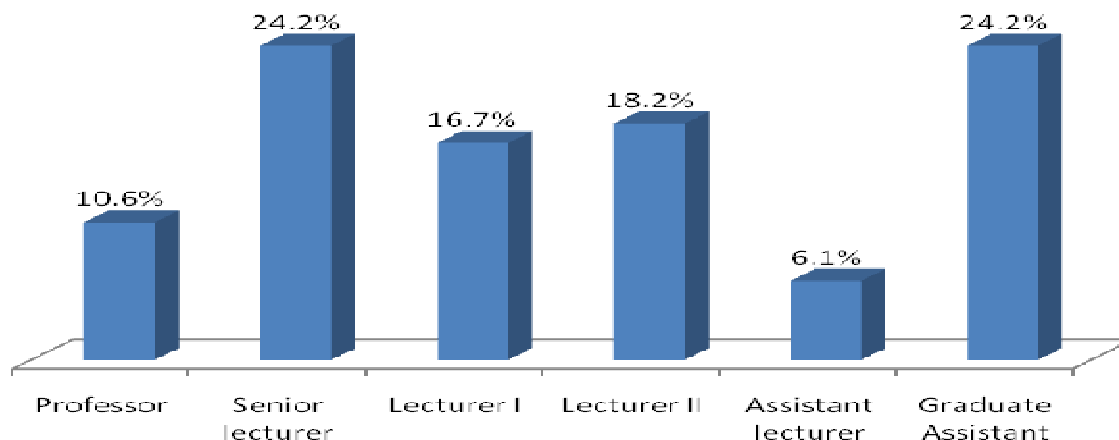Entries in Figure 4 shows that 24.2% of the lecturers
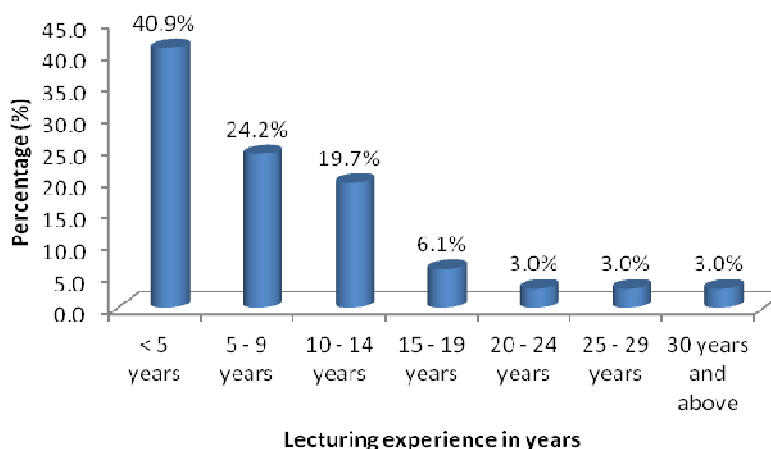
Figure 4. Rank of the lecturers.

Figure 5. Working experience of the lecturers in the University.

were senior lecturers and graduate assistant respectively. About 18 and 17% of them were lecturer II and Lecturer I, respectively. The remaining 10.6 and 6.1% were professors and assistant lecturers respectively. Entries in Figure 5 further shows that higher proportion (40.9%) had spent less than 5 years in lecturing, while 24.2% had spent between 6 and 9 years in lecturing. About 20% had spent between 10 and 14 years in service. The remaining 3.0% had spent between 20 and 24 years, 25 and 29 years and 30 years and above, respectively. The mean lecturing experience was 8 years. This could serve as an advantage for improving the teaching and research.

General windows skills possessed by lecturers

Data in Table 1 shows that lecturers in Faculty of Agriculture, University of Nigeria, Nsukka were skilled in the following areas of general computer windows

operation: Shutting computer down properly (M = 2.55), minimise, maximise and resize of windows (M = 2.26), renaming of files (M = 2.24), moving and copying files from one location to another (M = 2.23), saving files in personal directory/general directories (M = 2.21), searching for a particular file (M = 2.18), cut/copy and paste between applications (M = 2.12), recovering of deleted documents (M = 2.09), back up of work to flash drive and CD rom (M = 2.00), saving and arrange files in folders (M = 1.98), creating new directories/folders (M =1.94), create a shortcut on the desktop (M = 1.89), use of windows explorer to manage files (M = 1.76), updating of anti-virus (M = 1.74), and use windows help (M = 1.61). These activities are routine and basic operations in operating computer; hence the users of computer are expected to know them and use them regularly.

However, the lecturers were not skilled in the following areas of computer general windows operation: Switching between applications (M = 1.47), setting up of a

Table 1. Mean score of respondents general windows skills.

General windows skill	Mean	S.D.
Recovering of deleted documents	2.09*	1.10
Saving files in personal directory and in general directories	2.21*	0.90
Use of windows explorer to manage files	1.76*	1.00
Creating new directories/folders	1.94*	1.06
Saving and arrange my files in a folders	1.98*	1.03
Move and copy files	2.23*	0.97
Create a shortcut on the desktop	1.89*	1.06
Renaming of files	2.24*	0.97
Searching for a particular file	2.18*	0.95
Use of disk clean-up tool	0.98	1.15
Running of scandisk	1.29	1.29
Defragmentation of C drive (hard disk)	0.61	0.95
Switching between applications	1.47	1.05
Minimise, maximise and resize windows	2.26*	0.93
Cut/copy and paste between applications	2.12*	1.04
Use windows help	1.61*	1.08
Setting up of a screensaver	1.36	1.07
Back up of work to flash drive and CD	2.00*	1.02
Updating of anti-virus	1.74*	1.20
Shutting of PC down properly	2.55*	0.84
Converting word documents to PDF document	1.06	1.18
Overall mean score	1.79*	0.74

*Skill.

Table 2. Mean score of respondents printers and other peripherals skills.

Printers and other peripherals	Mean	S.D.
Printing of documents	2.27*	0.96
Solving problem with printer paper jam	1.36	1.10
Scanning an image	1.06	1.17
Manipulate a scanned image with appropriate software such as paint shop etc and save in JPEG format	0.71	1.00
Burn files to a CDR (recordable CD)	1.17	1.14
Erase and reuse a CDRW (rewritable CD)	0.91	1.10
Transfer a file from the camera to the PC	0.92	1.11
Set up and use of web cam available in PC	0.67	1.08
Overall mean score	1.16	0.64

*Skill.

screensaver (M = 1.36), running of scandisk (M = 1.29), use of disk clean-up tool (M = 0.98) and defragmentation of hard disk drive (M = 0.61). These are technical areas in computer operation that require expertise knowledge. Thus, lecturers who have not undergone training in these areas may not be able to perform job related to these operations. This could explain why they were not skilled in those specific technical operations. Also, the respondents were not skilled in converting word documents to PDF format (M = 1.06). The possible reason could be as a result of the non importance

attached to it before now. Another reason could be as a result of the non-awareness and or unavailability of the software that convert from word to PDF and vice-versa. The overall mean score for general windows skill was 1.79, showing that they were skilled in general windows.

Level of printers and other peripherals skills possessed by lecturers

Data in Table 2 reveals that the respondents were skilled in printing of documents (M = 2.27). Since the respondents

Table 3. Mean score of respondents word processing skills.

Word processing (Microsoft office)	Mean	S.D.
Format text e.g. size, bold, font, column	2.41*	0.67
Spell check a document	2.20*	0.93
Copy/cut some words in a document and paste elsewhere	2.45*	0.74
Proper use of undo tool	2.55*	0.72
Customise toolbar	1.64*	1.03
Set margins and page breaks	1.64*	1.03
Create numbers and bullets in a document	2.05*	0.98
Set headers and footers	1.48	1.08
Inserting borders and shading to tables and paragraphs	1.64*	1.03
Linking other documents using hyperlink	0.68	0.93
Import images into document	1.20	1.09
Overall mean score	1.81*	0.67

*Skill.

were mainly lecturers in the university who are involved in academic activities, it is expected that they should know how to print their documents from the computer. Also, the data in Table 2 further show that the lecturers were not skilled in other peripherals areas relating to printing and scanning like solving problem with printer paper jam (M = 1.37), scanning an image, (M = 1.37), manipulating a scanned image with appropriate software such as paint shop and save in JPEG format (M = 0.71), burn files to a CDR (recordable CD) (M = 1.17), erase and reuse a rewritable CD (M = 0.91), transfer a file from the camera to the computer (M = 0.92) and set up and use of web cam available in PC (M = 0.67). The overall mean score for printing/scanning skills was 1.16, showing that they were not skilled.

Level of word processing skills possessed by lecturers

Data in Table 3 show that lecturers in Faculty of Agriculture, University of Nigeria, Nsukka were skilled in the following areas of word processing. These included: Proper use of undo tool (M = 2.55), copy/cut some words in a document and paste elsewhere (M = 2.45), formatting text e.g. font size, lettering, diving into columns (M = 2.41), spell check a document (M = 2.20), create numbers and bullets in a document (M = 2.05), adding borders and shading to tables and paragraphs (M = 1.64). Since most of the academic works of the lecturers are word processed, there is possibility that they would have improved in their word processing skills. Meanwhile, the lecturers were not skilled in the following areas of word processing: inserting headers and footers (M = 1.48), import images into document (M = 1.20) and linking other documents using hyperlink (M = 0.68). The overall mean score for word processing skills was 1.81, showing that they were skilled.

Level of slides preparation and presentation skills possessed by lecturers

Entries in Table 4 show that the respondents were skilled in only 3 out of 13 issues raised under slides preparation and presentation. These included: Creating a new slide for presentation/lecture (M = 1.70), inserting bullets in slides (M = 1.64) and deleting of already prepared slides (M = 1.58). The respondents were not skilled in adding an image or graphic, table and chat in slides (M = 1.09), formatting a slide properly for presentation (M=1.38), adding colour and effect in slides (M = 1.29), create and use a master slide (M=0.76), add shapes and lines to slides (M = 1.02), duplicate slides (M = 1.08), create an organisational chart and table in a slide (M = 0.74), create transitional effects in slides (M = 0.55), start a slide show without any guidance (M =1.33) and set up and operate multimedia projector (M = 0.86).

This implies that, most of the lecturers in the faculty still depend on assistance for slides preparation before they can present papers in conferences or seminars. This is a serious negative signal to university educational system. There is pressure on academic staff to respond to changes produced by the increasing globalisation of education markets, and the capacity of ICTs to transform the ways education is delivered. The overall mean score for slides preparation and presentation skills was 1.15, showing that the lecturers of the faculty were not skilled.

Level of spreadsheets preparation skills possessed by lecturers

Entries in Table 5 show that the respondents were skilled in the following areas of spreadsheets preparation and formatting: entering of text and numeric data in cells (M = 1.76), ability to save a spreadsheet document in a specify directory (M = 1.70), inserting and deleting rows and

Table 4. Mean score of respondents slides preparation and presentation skills.

Slides preparation and presentation skill	Mean	S.D.
Create a new slide for presentation / lecture	1.70*	1.15
Inserting bullets in slides	1.64*	1.17
Add an image or graphic, table & chat in a slide	1.09	1.09
Formatting a slide properly for presentation	1.38	1.09
Adding colour and effect to slides	1.29	1.09
Create and use a master slide	0.76	0.99
Add shapes and lines to slides	1.02	1.03
Duplicate slides	1.08	1.12
Delete slides	1.58*	1.12
Create an organisational chart and table in a slide	0.74	0.91
Create transitional effects in slides	0.55	0.82
Start a slide show without any assistance	1.33	1.14
Set up and operate multimedia projector	0.86	0.99
Overall mean score	1.15	0.89

*Skill.

Table 5. Mean score of respondents spreadsheet skills.

Excel spreadsheet	Mean	S.D.
Entering of text and numeric data in cells	1.76*	1.15
Enter a simple formula (e.g. sum, average etc)	1.39	1.12
Save a spreadsheet document in a specify directory	1.70*	1.15
Change the orientation of the print-out from portrait to landscape or vice-versa	1.42	1.17
Inserting and deleting rows and columns	1.68*	1.12
Change the width of a column and height of a row	1.45	1.12
Switch between worksheets	1.32	1.19
Format text (size, colour, bold etc)	1.48	1.15
Format a number to decimal places	1.20	1.18
Copy and paste a specify cell	1.53*	1.12
Linking cells between worksheets	0.83	1.00
Sort data in a column	1.00	1.12
Use the auto fill tool	0.70	1.03
Adding headers and footers to a work sheet	0.97	1.09
Produce a chart from a given data	1.06	1.13
Edit a chart	1.08	1.10
Import information into a spreadsheet from another application (e.g. from a word document)	0.89	1.13
Overall mean score	1.26	0.93

*Skill.

columns (M = 1.68) and copying and pasting in a specify cell (M = 1.53). This implies that, the use of spreadsheet by lecturers in the faculty is still limited to a very few activities. As academic staff of the faculty, it is expected that the competency level should be high as spreadsheets could be used for computation of student results among other things. As such, based on the present results obtained, they were not considered as been skilled in spreadsheets use and management.

The respondents were not skilled in changing the orientation of the print-out from portrait to landscape or vice-versa (M = 1.42), entering a simple formula (e.g. sum, average etc) in worksheet (M = 1.39), changing the width of a column and height of a row (M =1.45), switch between worksheets (M = 1.32), format text (size, colour, bold etc) (M = 1.48), format a number to decimal places

Table 6. Mean score of respondents internet and online activities skills.

Internet and on-line activities	Mean	S.D.
Connect to the internet using any internet browser	2.42*	0.80
Competent user of the internet	2.05*	0.79
Know where to put a URL in the browser to find a particular page	1.62*	1.16
Know how to find the information that may be required	2.09*	0.81
Know how to download a document from the website	2.11*	0.87
Know how to download software	1.48	1.18
Know how to set up preferred default home page	1.17	1.11
Know how to use a search engine like Google, Yahoo etc.	2.17*	0.92
Know how to navigate a website	1.73*	1.15
Create and send an email to other staff	2.33*	0.82
Reply to, delete or forward an email	2.39*	0.82
Add a contact to my contacts list	1.92*	1.18
Know how to group contacts in e-mail box	1.36	1.17
Attach a word document or picture to an email and send	1.74*	1.19
Know how to sort emails	1.76*	1.15
Can save email to an outlook folder	1.08	1.11
Can create a new outlook folder	0.79	1.01
Can subscribe to and unsubscribe from an email mailing list	1.29	1.23
Access e-mail box with ease	1.70*	1.24
Uploading of lecture note on the web	1.15	1.19
Email an image file as attachment	1.41	1.22
Overall mean score	1.74*	0.80

*Skill.

(M = 1.20), linking cells between worksheets (M = 0.83), sort data in a column (M = 1.00), use the auto fill tool (M = 0.70), adding headers and footers to a work sheet (M = 0.97), produce a chart from a given data (M = 1.06), edit a chart (M = 1.08) and importing information into a spreadsheet from another application (e.g. from a word document) (M = 0.89). The possible reason for this low level skill could be as a result of importance attached to it by individual and the faculty as an institution. The overall mean score for spreadsheets skills was 1.26, showing that they were not skilled.

Level of internet and online activities skills possessed by lecturers

Entries in Table 6 show that the respondents were skilled in the following areas of internet and online activities: ability to connect to the internet using any internet browser (M = 2.42), reply to, delete or forward an email (M = 2.39), create and send an email to other staff (M = 2.33), know how to use a search engine like Google, Yahoo and Ask me (M = 2.17), know how to download a document from website (M = 2.11), know how to find the information that may be required (M = 2.09), competent user of the internet (M=2.05), add a contact to e-mail contacts list (M = 1.92), sorting of emails (M = 1.76),

attach a word document or picture to an email and send (M = 1.74), navigate a website (M = 1.73), check e-mail box with ease (M = 1.70), know where to put a URL in the browser to find the home page they are looking for (M = 1.62).

The presence of internet access in University of Nigeria could be one of the likely factors that enhanced lecturers' level of internet and online activities skills. With the advent of internet, lecturers will have the opportunity to access a lot of information for various assignments in a more innovative way. By a click of a button, they can have full access to various kinds of information and even know relevant areas of critical concern and interest. Also, ideas could be shared online. Since they are connected to internet and access the web regularly, this could enhance their skills remarkably.

The respondents do not have the skills in the following areas of internet and online activities: how to download software (M = 1.48), email an image file as attachment (M = 1.41), how to group contacts in e-mail box (M = 1.36), subscribe to and unsubscribe from an email mailing list (M = 1.29), how to set up preferred default home page (M = 1.17), save email to an outlook folder (M = 1.08), uploading of lecture note on a particular site on the web (M = 1.15), and creating a new outlook folder (M = 0.79). The possible reason staff were still lacking in some of the aforementioned activities could be as a result of their

Table 7. Mean score of respondents data input and analysis skills.

Data analysis using computer software	Mean	S.D.
Coding of data for computer analysis and interpretation	1.33	1.24
Key in data in excel or SPSS or STATA or GENSTAT or other software applications	1.30	1.16
Analysis of data using Excel	0.89	1.08
Analysis of data using SPSS	0.82	1.05
Analysis of data using STATA	0.33	0.73
Analysis of data using GENSTAT	0.48	0.99
Analysis of data using MINITAB etc	0.53	1.00
Overall mean score	0.84	0.87

*Skill.

Table 8. Percentage distribution of respondents' overall areas of training needs.

Area of training needs	Yes (%)	No (%)
General windows skill	77.4	22.6
Word processing	76.4	23.6
Excel spread sheet	88.9	11.1
Preparation of slides	90.0	10.0
E-mail accessing / usage	78.2	21.8
Internet and online activities like browsing for project materials	90.4	9.6
Data analysis using computer software e.g. SPSS, GENSTAT, Excel, E-view etc	95.0	5.0

Area of training needs by rank.

priority and importance attached to these skills. Lecturers who are mindful of just publishing papers may not bother learning how to download software. The overall mean score for internet and online skills was 1.74, showing that staff were skilled.

Level of data input and analysis skills possessed by lecturers

Data in Table 7 show that the respondents were not skilled in coding of data for computer analysis and interpretation (M = 1.33), data entering/input using computer software like Excel, Statistical Package for Social Science (SPSS), STATA, GENSTAT, etc (M = 1.30), data analysis using Excel (M = 0.89), data analysis using SPSS (0.82), data analysis using MINITAB (M = 0.53), data analysis using GENSTAT (M = 0.48) and data analysis using STATA (M = 0.33). This implies that majority of the lecturers do not possessed the skills for analysing data using computer software like Excel, SPSS, GENSTAT, etc .

Lack of skills in these computer software packages shows a serious signal in research development in the faculty and in the university. The implication of this is that, the low level of computer analysis could hinder the

progress of research work in the faculty and university in general, which could affect the research output negatively. The few that were literate in this area will not have the opportunity of improving their knowledge because of the numerous tasks of helping others in the faculty. These computers analysing software reduces the cost of conducting research, provide more reliable and accurate results, and also make the work faster. The overall mean score for data input and analysis skills was 0.84, showing that they were not skilled. This therefore calls for an urgent attention of both individuals and the university authority to improve on human development of her staff in order to improve the quality of research produced.

Overall area of training needs

Data in Table 8 show the overall areas where training will be needed for lecturers in faculty of agriculture, University of Nigeria, Nsukka. The major areas where the highest demand for ICT training was registered by the lecturers was data analysis using computer software like SPSS, GENSTAT, Excel, E-view etc (95.0%). Universities are research centres and innovative research can best be conducted by the use of ICT. When these researches are

Table 9. Percentage distribution of respondents according to areas of training needs by rank.

Area of training needs	Ranks					
	Professor	Senior lecturer	Lecturer 1	Lecturer II	Assistant lecturer	Graduate assistant
General windows skill	71.4	69.2	75.0	75.0	50.0	93.3
Word processing	50.0	69.2	77.8	77.8	66.7	93.3
Excel spread sheet	83.3	93.8	80.0	81.8	75.0	100.0
Preparation of slides	83.3	93.3	80.0	80.0	100.0	100.0
E-mail accessing / usage	80.0	69.2	77.8	77.8	66.7	87.5
Internet and online activities like browsing for research materials	83.3	90.0	88.9	77.8	100.0	100.0
Data analysis using computer software e.g. SPSS, GENSTAT, Excel, E-view etc	83.3	100.0	77.8	100.0	100.0	100.0

conducted, they must be analysed for proper dissemination to appropriate quarters (policy makers, farmers, industries etc). Academic staff had quite serious training needs in statistical method to participate in publishing research. This may be a serious issue as statistical analyses are required in conducting research in lecturers' area of specialisation/department. This could also affect the next generation of researchers by lowering the quality of our nation research output. Whatever is being injected into the system today will surely dictate the future of the country's growth particularly in the area of agricultural development.

Other areas of high demand for ICT training by the lecturers were internet and online activities (90.4%) and preparation of slides for presentations (90.0%). With the advent of internet, lecturers/researchers will have the opportunity to access a lot of information for various assignments in a more innovative way. By a click of a button, researchers can have full access to various kinds of information and even know relevant areas of critical concern and interest. It will also offer them the chance to know the demands of industry and conduct research to meet industry's needs. Also, the way the result outputs are presented matters a lot in research. It must be stressed that a country without systematic, coherent, innovative and coordinated research culture rarely develops scientifically and economically.

The respondents also indicated their demand for ICT training in the following areas: spreadsheets preparation (88.9%), computer general windows skills (77.4%) and word processing (76.4%). For lecturers to function effectively both in teaching and research, they are required to be skilled in these areas.

Data in Table 9 show the areas where training will be needed by different group of lecturers in faculty of agriculture, University of Nigeria, Nsukka. The data in Table 9 show that Professors need ICT training in excel spread sheet (83.3%), preparation of slides (83.3%), internet/online activities like browsing for research materials (83.3%) and data analysis using computer software like SPSS, GENSTAT (83.3%). Senior lecturers

need ICT training in data analysis using computer software like SPSS, GENSTAT (100.0%) and internet and online activities like browsing for research materials (90.0%).

Lecturer I need ICT training in internet and online activities like browsing for research materials (88.9%), excel spread sheet (80.0%) and preparation of slides (80.0%), while lecturer II need training in excel spread sheet (81.8%) and data analysis using computer software like SPSS, GENSTAT (100.0%). Both assistant lecturers and graduate assistants need ICT training in data analysis using computer software like SPSS, GENSTAT (100.0%), internet and online activities like browsing for research materials(100.0%), preparation of slides (100.0%) and preparation of slides (75.0%; 100.0%), respectively. This implies that different levels of academicians are required to undergo different type of training in order of priority as observed by Tasie (2011).

Area of training needs by sex

The data in Table 10 show that male lecturers need ICT training in data analysis using computer software like SPSS, GENSTAT (96.7%) and improving on excel spread sheet (88.2%), while female lecturers need ICT training in internet and online activities like browsing for research materials (96.0%) and data analysis using computer software like SPSS, GENSTAT (93.3%). This shows that both male and female lecturers in the faculty of agriculture, University of Nigeria, Nsukka require ICT training in data analysis using computer software like SPSS, GENSTAT etc. This is necessary to improve the quality of research publications of the academic staff. When lecturers in the faulty of agriculture improve their analysis skill, the possibility of their supervisees (who are future academicians) to improve their research skill will be high. This could also contribute in solving some of the research problem in addressing farmers' problem in the face of the current food crisis particularly in African countries.

Table 10. Percentage distribution of respondents according to areas of training needs by sex.

Area of training needs	Sex	
	Male	Female
General windows skill	73.3	82.6
Word processing	72.4	80.8
Excel spread sheet	88.2	89.7
Preparation of slides	87.9	92.6
E-mail accessing / usage	75.9	80.8
Internet and online activities like browsing for project materials	85.2	96.0
Data analysis using computer software e.g. SPSS, GENSTAT, Excel, E-view etc	96.7	93.3

Table 11. Percentage distribution of respondents according to areas of training needs by age group.

Area of training needs	Age group			
	30 years and below	31-40 years	41-50 years	50 years and above
General windows skill	77.8	69.2	81.8	77.8
Word processing	77.8	76.9	75.0	77.8
Excel spread sheet	90.0	80.0	92.9	90.0
Preparation of slides	100.0	80.0	92.3	88.9
E-mail accessing / usage	80.0	69.2	79.2	87.5
Internet and online activities like browsing for project materials	100.0	84.6	90.5	88.9
Data analysis using computer software e.g. SPSS, GENSTAT, Excel, E-view etc	100.0	94.1	95.8	88.9

Area of training needs by age group

The data in Table 11 show that lecturers under 30 years need ICT training in preparation of slides (100.0%), internet and online activities like browsing for research materials (100.0%) and data analysis using computer software like SPSS, GENSTAT (100.0%). Lecturers between the ages 31and 40 years need training in internet and online activities like browsing for research materials (84.6%) and data analysis using computer software like SPSS, GENSTAT (94.1%). Those that were between 41 and 50 years need training in data analysis using computer software like SPSS, GENSTAT (95.8%) and excel spread sheet (92.9%). Lecturers that were 50 years and above need ICT in excel spread sheet (90.0%), preparation of slides (88.9%), internet and online activities like browsing for research materials (88.9%) and data analysis using computer software like SPSS, GENSTAT (88.9%).

The result shows that the lecturers in faculty of agriculture, University of Nigeria, Nsukka need training in data analysis using computer software irrespective of their age. This is a clear indication that, to promote effective research in the faculty, lecturers must be able to analyse data using computer software. This could be as a result of its reliability and efficiency.

Problems associated with ICTs use by lecturers to improve teaching and research

Data in Table 12 show the problems associated with ICT use by lecturers to improve teaching and research. The respondents were of the opinion that incessant power failure (M=1.73) was the major problem associated with ICT use to improve teaching and learning in the faculty. The issue of incessant power failure has been a major problem in Nigeria. This could hinder academic programme of universities in several ways. Without power, computer and other ICT gadgets cannot be operated.

Other perceived problems were poor internet connectivity (M = 1.71), inadequate ICT facilities like computers and electronic board in the faculty (M = 1.58), lack of internet access (M = 1.56), high cost of ICT equipment (M = 1.33), non availability of ICT centres to update staff ICT knowledge (M = 1.27), lack of compe-tence in internet searching skills on the part of many lecturers (M = 1.26), Priority issues (M = 1.18) financial problem (M = 1.17), poor information communication gap

Table 12. Mean score of problem associated with ICTs use to improve teaching and learning.

Problem associated with ICTs use to improve teaching and learning	Mean	S.D.
Non availability of ICT training centers to update ICT knowledge	1.27*	0.75
Inadequate ICT facilities like computer, electronic board in the faculty	1.58*	0.63
High cost of ICT equipment	1.33*	0.73
Incessant power failure	1.73*	0.62
Lack of internet access	1.56*	0.58
Poor internet connectivity	1.71*	0.51
Too busy schedule	0.86	0.69
Lack of awareness on the various analytical software e,g SPSS, STATA etc	1.12*	0.81
Poor attitude towards acquiring ICT skills	0.73	0.73
Unwillingness of some colleagues to teach others what they have acquired	1.00*	0.72
Poor information communication methods	1.12*	0.66
Priority issues on the part of both the faculty and the university	1.18*	0.67
Financial problem	1.17*	0.75
Lack of competence in internet searching skills on the part of many lecturers	1.26*	0.68

*Major problem.

(M = 1.12) and lack of awareness of the various analytical software among (M = 1.12).

CONCLUSION AND RECOMMENDATIONS

To meet the educational needs of the new global organization, lecturers need continuing professional development in order to maintain and upgrade their skills. They also need to exemplify a willingness to explore and discover new technological capabilities that would enhance and expand learning experiences. For a satisfactory teaching and research in the university, it is absolutely essential that lecturers, as the most valuable human resource in the educational systems, should improved their ICT skills properly. They need a wide variety of educational opportunities to improve these ICT skills. The highest demand for ICT training need by the lecturers was data analysis using computer softwares like SPSS, GENSTAT, Excel, E-view etc, improvement in the use of internet and online activities and preparation of slides for presentations. There is therefore the need to expose these staff of the faculty to ICT training to enhance their competence in the above areas. Efforts should also be made by University authority to looks beyond development of programmes that merely focus on training lecturers in the operation of computers and ICT literacy per se but plans to work actively towards enabling faculty of agriculture lecturers to master ICT as an effective tool to improve teaching and research in the university.

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