

LOW END MOBILE PHONE MAINTENANCE COMPETENCIES REQUIRED FOR YOUTHS EMPOWERMENT AT SKILL ACQUISITION CENTRES IN ENUGU STATE.

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Abstract

The study was carried out to determine low end mobile phone maintenance competencies required for youth empowerment at skill acquisition centres in Enugu State. Three research questions guided the study while three null hypotheses formulated were tested at 0.05 level of significance. A descriptive research design was adopted for the study. The population for the study comprised all the 69 lecturers of electrical/electronic technology in two government established universities and roadside cell phone technicians. A structured questionnaire was used for collecting data from the respondents. The instrument was validated by three experts; two in the Department of Industrial Technical Education, University of Nigeria, Nsukka and one cell phone technician. Cronbach alpha reliability method was employed to determine the internal consistency of the questionnaire item; a cronbach alpha coefficient of 0.83 was obtained. Sixty nine copies of the instrument were administered while sixty five copies of the instrument were retrieved and analyzed using mean to answer research questions while t-test was used to test the null hypotheses at 0.05 level of significance. The study found out that the 21 competencies were required for servicing low end mobile phone, 22 competencies for servicing low end phones and 20 safety competencies were required for maintenance of low end mobile phones. Recommendations include that all the low end mobile phone maintenance competencies should be packaged and used to train youths at skill acquisition centres in Enugu State.

Keywords: low end mobile, empowerment, youths, maintenance, unemployment

Introduction

Unemployment is the major problem facing youths in Nigeria. Unemployment is the condition of having no job. Youth unemployment is being recognized as one of the problems that could grow into global proportions in the coming years causing social and economical problems for the societies (Fanimio and Okere, 2009). Youth is a boy or young man in his teens or early twenties. Youths in the view of Sowande and Olaitan (2000) are the most vulnerable individuals in the society, especially in terms of means of livelihood. According to United Nation General Assembly Report (1995), youths are young

people of 15-24 years bracket; this age range may go up to 30 years in developing country like Nigeria. Sowande and Olaitan listed some characteristics of youths that could be exploited for skill acquisition to include: having less fear of failure, stronger and generally healthier than the aged, less conservative and ready to welcome innovation faster than adults, having sound memory and very conscious of their personal, occupational and community development. They advocated for training in agriculture and technology as a means of minimizing poverty among youths (Dumbiri, 2010). Youths in the context of this

study are unemployed graduates of senior secondary schools, technical colleges and tertiary institutions such as colleges of education, polytechnics and universities who may want to be competent in cell phone maintenance. These youths therefore require some competencies in low end mobile phone maintenance

Low end mobile phone also called low end cell phone, hand phone, handset or mobile. Bakare (2013) described low end mobile phone as a portable telephone that uses wireless cellular technology to send and receive phone signals. Hahn and Kibora (2008) defined low end mobile phone as an electronic device used to make mobile telephone calls across a wide geographic area. Low end mobile phone is a cordless telecommunication device that someone can use to make and receive calls, store data and send or receive messages. These low end mobile phones are possessed by majority of Nigerians. They are very cheap, easy to operate and very simple to setup. The Report of Business Link (2011) mentioned that a

Jimoh, Bakare & Oriola, Olatunji Fadairo phones include: liquid crystal display (LCD), menu button, keypad, antenna, battery, microphone, earpiece, power switch, battery terminal, power integrated circuit, oscillator, frequency divider, central processing unit and flash chips. Low end mobile phones are found very useful in businesses, education, health, securities, politics and government. Generally mobile phones and their components are liable to damage or malfunction most especially when handle carelessly or misuse. Common faults in low end mobile phones are hardware faults, software faults and setting faults. When these faults occur in a low end mobile phone there is need for maintenance.

Maintenance is a step taken to revive a dying object or facility. Maintenance according to Olaitan in Ihediwah (2007), is a set of measure or steps taken to ensure that a given piece of equipment or infrastructure is kept in good operational order until it attain its maximum possible life span. Maintenance in this study is the activity carried out to restore back

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mobile phone can make and receive telephone calls to and from the public telephone network which includes other mobiles and fixed-line phones across the world. It does this by connecting to a cellular network owned by a mobile network operator. Some low end mobile phones have features beyond sending text messages and making the short or long distance voice calls, the other features include: internet browsing, MP3 playback music, email, personal organizer, built in cameras, multimedia messaging (MMS), short messages (SMS), call registries, built in games, voice mails, downloading, video call, bluetooth and infrared. Basic components of low end cell

malfunction or faulty low end mobile phones. Someone must be competent in maintaining low end mobile phone to satisfaction. Competency comprises skills, knowledge and attitudes. Competence in the statement of Olaitan and Ali (1997) is the successful performance of a task through the use of knowledge, skills, attitudes and judgement. In reference to this study, maintenance competencies are the knowledge, skills and attitudes required by youths for repairing and servicing different forms of low end mobile phones in order to earn living. With government decision to solve the problem of youth's unemployment and militancy in Nigeria

as a whole, the success will require aggressive training of youths in low end mobile phone maintenance at the skills acquisition centres in order to empower them for future and sustainable living. Skills acquisition centre is a place set up by government to train or retrain individuals in a specific occupation. The facilities for training these youths must also be made available including training programme and professional teachers. Olaitan, Asogwa and Onipede (2009) observed that unemployed youths have no means of survival except by depending on their parents. This indicates that they need to be employed to reduce poverty. Low end cell phone maintenance could provide good employment opportunity for these youths if they possess competencies in servicing and repairing of mobile phones.

Youth empowerment is an alternative besides other methods of creating employment opportunities. It is a process of supporting another person or persons to discover and claim personal power. Zuehike (2009) explained that youths are the future of every nation and inheritors of the earth tomorrow. One of the major challenges faced by most of the countries in the world today is to do with youth unemployment. The overall unemployment rate is growing at an alarming speed. Amongst the unemployed, the unemployment of youth seems to be alarming. The current global youth population is estimated to be at 1.5 billion of which 620 million are employable and ninety percent of this population live in developing countries where Nigeria belongs. Nigeria has a fast increasing youth population and the rate of unemployment too is rising rapidly. Fanimu and Okere (2009) stated that unemployed youths are therefore readily available for anti-social criminal activities that undermine the stability of society. An unstable society increases the

Jimoh, Bakare & Oriola, Olatunji Fadairo risk of the market. In Nigeria, the unemployment rate is worrisome. It has consistently increased in the last few years. Jorge (2011) stated that unemployed and underemployed youths are more exposed to conflicts and illegal activities-many of them fall prey to armed and rebel conflicts. The general purpose of this study was to determine low end mobile phone maintenance competencies required for youth empowerment at skill acquisition centres in Enugu State. Specifically the study sought to:

1. identify maintenance competencies required by youths in servicing low end mobile phone
2. identify maintenance competencies required by youths in repairing low end mobile phone
3. identify safety competencies required by youths for effective maintenance of low end mobile phones

Research Questions

The following research questions guided the study:

1. What are the maintenance competencies required by youths in servicing low end mobile phones?
2. What are the maintenance competencies required by youths in repairing low end mobile phones?
3. What are the safety competencies required by youths for effective maintenance of low end mobile phones?

Hypotheses

The following hypotheses were tested at 0.05 level of significance:

H₀₁: There is no significant difference in the mean responses of the lecturers of electrical / electronic technology and mobile phone technicians on the maintenance competencies required by

youths in servicing of low end mobile phones

H0₂: There is no significant difference in the mean responses of the lecturers of electrical /electronic technology and mobile phone technicians on the maintenance competencies required by youths in repairing of low end mobile phones

H0₃: There is no significant difference in the mean responses of the lecturers of electrical /electronic technology and mobile phone technicians on the safety competencies required by youths for maintenance of cell phones

Method

Survey research design was employed for this study. Osuala (2005) observed that survey research focuses on people and their opinions, attitudes, motivations and behavior. The descriptive research design was therefore suitable for this study since it tends to obtain data from electrical and electronic instructors and mobile phone technicians on the low end mobile phone maintenance competencies for empowerment of youths. The study was conducted in Enugu State of Nigeria. The population for the study was all the 18 lecturers of electrical/electronic technology in two government established universities and 48 mobile phone technicians conveniently selected using convenience sampling technique.

A structured questionnaire made up of 63 competency items was developed for collecting data in accordance with the research questions. The instrument was in three sections A-C. A was centered on maintenance competencies

required by youths in servicing low end mobile phone. B was for collecting data on maintenance competencies required by youths in repairing low end mobile phone. C was for collecting data on safety competencies required by youths for effective maintenance of low end mobile phones. Each questionnaire item was assigned a four point response scale of strongly required, required, slightly required and not required with values of 4, 3, 2 and 1. Two Lecturers in the Department of industrial technical education and one Lecturer in the Department of Electronics Engineering all in the University of Nigeria, Nsukka validated the instrument for the study. Cronbach alpha method was used to determine the internal consistency of the questionnaire items; an overall coefficient of value of

0.83 was obtained. The 66 copies of the questionnaire were administered on respondents with the help of three research assistants and only sixty two copies of the questionnaire were retrieved representing 91.17 percent return.

The data collected from the study were analyzed using mean for answering the research questions while t-test was used for testing the null hypotheses at probability level of 0.05 and 60 degree of freedom. An item with a mean rating of 2.50 or above was regarded as require while any item with the mean rating below 2.50 was regarded as not required.

Results

The results for the study in Tables 1-3 were obtained from the research questions answered through data collected and analyzed.

Table 1: Mean Responses and t-test of Lecturers and Mobile Phone Technicians on the Maintenance Competencies required by Youths in Servicing Low End Phones.

<u>S/N</u>	<u>Maintenance competencies</u>	<u>Mean</u>	<u>S.D</u>	<u>t-cal</u>	<u>t-tab</u>	<u>Remark, Ho</u>
1	Check for proper coupling of the cell phones	3.19	0.76	0.08	1.66	<i>Required, NS</i>
2	Check the battery contacts for proper connection	3.39	0.82	0.68	1.66	<i>Required, NS</i>
3	Service the battery by removing carbon from the contacts	3.75	0.71	0.51	1.66	<i>Required, NS</i>
4	Clean the motherboard of a phone for proper operations	3.60	0.89	0.34	1.66	<i>Required, NS</i>
5	Check the settings of the phone for functionality	3.58	0.75	0.09	1.66	<i>Required, NS</i>
6	Check each ICs inside the phone for functionality	3.60	0.84	0.62	1.66	<i>Required, NS</i>
7	Dry-clean the phone using appropriate methods if drop inside the water	3.72	0.75	0.50	1.66	<i>Required, NS</i>
8	Check for proper contact of SIM card	3.45	0.82	0.61	1.66	<i>Required, NS</i>
9	Clean the whole of cell phone with appropriate agents	3.54	0.49	0.21	1.66	<i>Required, NS</i>
10	Check the speaker or mouth piece for proper operation	3.72	0.61	0.09	1.66	<i>Required, NS</i>
11	Check the charging point of a phone for functionality	3.63	0.67	0.41	1.66	<i>Required, NS</i>
12	Service the screen of a cell phone	3.73	0.73	0.22	1.66	<i>Required, NS</i>
13	Check the flash light of a cell phone for proper operation	3.49	0.89	0.21	1.66	<i>Required, NS</i>
14	Check the flip flop IC for proper operation in case of sliding phone	3.68	0.71	0.10	1.66	<i>Required, NS</i>
15	Check the power ICs of a cell phone for functionality	3.00	0.67	0.11	1.66	<i>Required, NS</i>
16	Check all electrical installation operations as designed in schematic manual	3.19	0.78	0.46	1.66	<i>Required, NS</i>
17	Check for contact of keyboard for proper operation	3.56	0.68	0.82	1.66	<i>Required, NS</i>

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18	Check the keyboard IC for effective operation	3.08	0.88	0.12	1.66	<i>Required, NS</i>
19	Check the active components in the charger for functionality	2.99	0.79	0.08	1.66	<i>Required, NS</i>
20	Check the passive components in the charger for functionality	2.90	0.75	0.78	1.66	<i>Required, NS</i>
21	Adjust the screen when malfunctioned	3.56	0.62	0.21	1.66	<i>Required, NS</i>
22	Clean the screen of a cell phone with a very soft dampened cotton cloth	3.59	0.71	0.34	1.66	<i>Required, NS</i>

Data in Table 1 reveal that all the 22 items on the maintenance competencies required by youths in servicing low end mobile phones in Enugu State had their mean values ranged from 2.90 to 3.75 which are above the cutoff point of 2.50. This showed that all the 22 maintenance competencies are required for empowering youths. The Table 2 also indicated that each item had its t-calculated value lower than t-table value of 1.66. This showed that there was no significant difference in the mean responses of the lecturers and mobile phone technicians on the maintenance competencies required by youths in servicing low end mobile cell phones in Enugu State. Therefore, the hypothesis of no significant difference was upheld for the 22 items.

Table 2: Mean Responses and t-test of Lecturers and Mobile Phone Technicians on the Maintenance Competencies required by Youths in Repairing Low End Mobile Phones.

S/N	Maintenance competencies	Mean	SD	t-cal	t-tab	Remark, Ho
1	Remove battery cover of a cell phone	3.67	0.89	0.27	1.66	Required, NS
2	Remove the battery from the cell phone	3.50	0.82	0.62	1.66	Required, NS
3	Unscrew the faulty cell phone	3.27	0.86	0.22	1.66	Required, NS
4	Remove the SIM card (s)	3.91	0.92	0.32	1.66	Required, NS
5	Split out the casing of the cell phone	3.57	0.78	0.56	1.66	Required, NS
6	Separate the key pad from the mechanism	3.56	0.88	0.12	1.66	Required, NS
7	Identify faulty area or components in a cell phone	3.79	0.79	0.36	1.66	Required, NS
8	Test the components with appropriate testing instruments	3.77	0.83	0.71	1.66	Required, NS
9	Remove the component(s) from the mother board using appropriate tools	3.58	0.90	0.09	1.66	Required, NS
10	Select components of correct specification	3.78	0.82	0.12	1.66	Required, NS
11	Verify the condition of the components before fixing it back to the mother board	3.67	0.79	0.08	1.66	Required, NS
12	Repair or change the faulty components if totally bad	3.76	0.83	0.19	1.66	Required, NS
13	Fixes back the components into mother board correctly	3.68	0.94	0.32	1.66	Required, NS
14	Applies soldering iron for only 3 seconds if needed	3.62	0.88	0.65	1.66	Required, NS
15	Applies sufficiency flux to point(s) being soldered	2.89	0.84	0.11	1.66	Required, NS
16	Fix/insert the electronic panel correctly into the	3.04	0.78	0.44	1.66	Required, NS main body
17	Screw the panel gently without breaking	2.98	0.87	0.23	1.66	Required, NS
18	Put/insert the SIM card to rest on it sit	3.61	0.76	0.45	1.66	Required, NS
19	Fix back the battery correctly	3.23	0.88	0.54	1.66	Required, NS
20	Put back the casing correctly	3.58	0.80	0.36	1.66	Required, NS
21	Switch on the phone	3.60	0.79	0.28	1.66	Required, NS

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Data in Table 2 reveal that all the 21 items on the maintenance competencies required by youths in repairing low end mobile phones in Enugu State had their mean values ranged from 2.62 to 3.91 which are above the cutoff point of 2.50. This showed that all the competencies are required for empowering youths. The Table also indicates that each item had its t-calculated value lower than t-table value of 1.66.

This showed that there was no significant difference in the mean rating of the lecturers and mobile phone technicians on maintenance competencies required by youths in repairing mobile phones in Enugu State. Therefore, the hypothesis of no significant difference was upheld for the 21 items.

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Table 3: Mean Responses and t-test of Lecturers and Cell Phone Technicians on the Safety Competencies Required by Youths for Maintenance of Mobile Phones

S/N	Competencies	X	SD	t-cal	t-tab	Remark, Ho
1	Switch off the cell phone before repair or maintenance	3.07	0.90	0.08	Required, NS	
2	Remove the battery of the phone before servicing	3.56	0.82	0.06	1.66	Required, NS
3	Use extreme care when disassembling cell phone for any reason	3.50	0.86	0.22	1.66	Required, NS
4	Apply the right pry tools and screwdrivers	3.61	0.79	0.35	1.66	Required, NS when changing the faceplates or other components.
5	Do not use any sharp instruments as leverage	3.58	0.90	0.50	1.66	Required, NS for removing the battery.
6	Never force any parts of cell phone apart; gently pry until they come loose on their own	3.78	0.86	0.62	1.66	Required, NS
7	Do not use tweezers, nail files or any other instruments not intended for mobile phone disassembly.	3.72	0.81	0.06	1.66	Required, NS
8	When setting phone down, place it directly onto the surface	3.79	0.80	0.57	1.66	Required, NS
9	Place a cell phone on a smooth soft object while dismantling in the laboratory	3.60	0.82	0.08	1.66	Required, NS
10	Use appropriate tools to remove bad components from a cell phone	3.72	0.86	0.15	1.66	Required, NS
11	Do not overcharge the battery of a cell phone	3.66	0.75	0.47	1.66	Required, NS
12	Avoid applying excessive heat on a cell phone's mother board while soldering	3.72	0.83	0.52	1.66	Required, NS
13	Use appropriate cleaning agent as a solvent for cell phones	3.11	0.76	0.21	1.66	Required, NS
14	Protect hands with gloves and wear safety shoes when operating portable tool and machine	3.69	0.78	0.09	1.66	Required, NS
15	Do not bridge or close terminals of a battery for any reason	3.22	0.67	0.43	1.66	Required, NS
16	Do not repair or service a cell phone if not conversant with the mode of operation	3.62	0.92	0.10	1.66	Required, NS
17	Install save software onto the cell phone in case of smart phones	2.89	0.76	0.78	1.66	Required, NS
18	Wear wrist scrap for preventing static current shock	3.56	0.82	0.30	1.66	Required, NS
19	Observes, solely rules relating to soldering while soldering a components in a cell phone	2.67	0.88	0.56	1.66	Required, NS
20	Handles mother board with care while working on a cell phone	3.50	0.79	0.28	1.66	Required, NS

Data in Table 3 reveal that all the 20 safety competencies required by youths for maintenance of mobile phones had their mean values ranged from 2.67 to 3.79 which are above the cutoff point of 2.50. This showed that all the 20 safety competencies were required when maintaining cell phones. The Table 3

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also indicated that each item had its t-calculated value lower than t- table value of 1.66. This showed that there was no significant difference in the mean responses of the lecturers of electrical/electronic technology and cell phone technicians on the safety

precautionary measures required by youths for effective maintenance of cell phones. Therefore, the hypothesis of no significant difference was upheld for the items.

Discussion of Result

The findings of the study reveal 20 maintenance competencies in repairing low end mobile phones, 22 maintenance competencies in servicing low end mobile phones and 21 safety competencies required by youths for effective maintenance of low end mobile phones. The findings of the study on low end mobile phone maintenance competencies required for youth empowerment at skill acquisition centres were in agreement with the finding of Akinduro (2006) in a study carried out on electrical installation and maintenance work skills needed by technical college's graduates to enhance their employability in Ondo State where it was found out that graduates of technical colleges required domestic installation skills, industrial installation skills, cable jointing skills, battery charging skills and winding skills in electrical machine for employment.

The findings of the study on low end mobile phone maintenance competencies also was in agreement with the findings of Ogbuanya, Bakare and Adelaja (2011) in a study carried out on mechatronics skills required for integration into electrical/electronic engineering technology programme in polytechnics for sustainable employment of graduates in contemporary Nigeria, where it was found out that all the mechatronic skills identified were needed by graduates of electrical and electronics technology for sustainable employment in contemporary Nigeria. The findings of the study on low end mobile phone maintenance competencies were in line with the finding of Yakubu (2004) in a study conducted on safety practice skills needed by woodwork students of technical colleges in Kaduna State, where it was found out that students of woodwork in technical colleges required sixteen safety practice skills in using hand tools; twenty safety practice skills in operating portable power tools; thirty safety practice skills in operating machines; ten safety practice skills in handling wood materials and ten safety practice observances in the use of instructional operating guides.

The findings of the study on low end mobile phone maintenance competencies were in consonance with the findings of Ifeanyieze and Olaitan (2009) in a study carried out on requisite required for capacity building of teachers of agriculture for effective teaching of yam production in colleges of Agriculture in south eastern Nigeria, where it was found out that teachers of agriculture needed capacity building in 9 skills in each of pre-planting and planting operations; 16 skills in post planting operations, 13 in processing and storage and 18 in delivering instruction. The findings of the authors in their various studies helped validate the findings of this study on low end mobile phone maintenance competencies required for youth empowerment at skill acquisition centres in Enugu State.

Conclusion

Low end mobile phone is an electronic device used for communication and it is useful in almost every activity of human beings. Majority of Nigerian population; both rich and poor possess low end phones and its maintenance is seen as a recent and lucrative trade where the potentials of youths can be tapped for employment and economic development. This study was now conducted because the researchers felt that there is need to expand the scope of training given to the youths at various skills acquisition centres. Low end mobile phone maintenance competencies for repairing and servicing of all kinds of mobile phones were therefore determined to train youths at various skill acquisition centers.

Recommendations

The following recommendations were made:

1. All the identified low end mobile phone maintenance competences should be packaged and used to empower youths at skills acquisition centres in Enugu State
2. Qualified and competent trainers should be employed for using the identified competencies to empower youths at various skills acquisition centres

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