



Stakeholders' Strategies of Training Modules for Out-of-School Youth and Skills Acquisition in Plantain Biscuit Processing in Rivers State

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ABSTRACT

The study focused on training modules that can help provide requisite skills for out-of-school youths development in plantain biscuit processing enterprise for self-employment in Rivers State. Purposive sampling technique and Yaro Yemene formula were used to select a sample size of 269 out of 589 population used as respondents. Two hundred and sixty nine (269) copies of the instrument were administered to the respondents out of which 205 were completed and returned. Data were analyzed using mean for research questions and the hypothesis was tested using Analysis of Variance (ANOVA) at 0.05 level of significance. The questionnaire was face-validated by five experts, and the reliability was tested using Cronbach's alpha reliability estimate to determine the internal consistency of the questionnaire. This yielded as reliability coefficient (r) of 0.977. The findings revealed that the modules packaged for training out-of-school youths for skills acquisition in plantain biscuit were all needed. The ANOVA results reveal no significant difference in the mean rating of the respondents stakeholders (teachers of home economics, extension agents and IITA staff) regarding the training module packaged for out-of-school youths for skills acquisition in plantain biscuit. Recommendations made include: government of Rivers State should direct the management of skills acquisition centres to integrate the identified and packaged training module into their skill acquisition programmes, to facilitate the training of out-of-school youths in plantain biscuit processing enterprise.

Keywords: Stakeholders, training modules, out-of-school youth, skills acquisition, plantain biscuit.

INTRODUCTION

Plantain is one of the major staple food crops, third after cassava and yam grown by farmers in Rivers State (Simonds 2008). People in Rivers State use plantain as trade community for income generation, industrial raw materials and farming. Haba (2004) remarked that plantain fruits deteriorate rapidly and therefore must be processed into several products of industrial market value with a view to diversifying their product base. The products according to International Institute for Tropical Agriculture (IITA) (2004), include biscuit. Robinson (2000), viewed training as the process of being taught a particular skill and practicing it until the required standard is reached. In plantain biscuit processing, one is trained if he/she has acquired the basic skills for participating in plantain biscuit processing enterprise. To ensure the mastery of the skills taught, training modules are used and trainers evaluate the performance of their subjects.

Module is explained by Olaitan (2003) as a unit of related skills arranged sequentially to be used in teaching a group of learners within a given time. Module is defined in this study as a series of arranged packages of operations or training stages that specify the procedures of processing plantain fruits into biscuit by out-of-school youths. The researcher considers out-of-school youths as the individual or group of individuals who had completed a minimum of three years in the senior secondary school and did not pass the prescribed number of subjects to a required level in sciences, social sciences, or arts. Such individuals may not be qualified for admission into any higher institution. Therefore, they need relevant skills acquisition to enable them gain entry into and function effectively in plantain biscuit processing venture as a means of livelihood. In the opinion of Mepha (2009), processing of plantain fruits is transforming raw ingredients into food. In this case, the out-of-school youths will be taught skills of transforming plantain fruit into plantain biscuit using training modules.

Mepba (2009) said that food processing requires the creative imagination of the processor to provide customers with an interesting variety of foods in their diets. He further said that all food processes are made up of series of steps (sometimes called unit operations) which have to be followed in a particular sequence in order to make the food. If the steps are changed, the process will produce a different product. Kent (2000), stated that processing starts with harvesting and finishes when the processed foods are eaten. He said the purpose of processing is to:

*Extend the storage time *Preserve the food *change the colour *Change the flavor or texture * Make the food attractive or easier to eat *Less food wastage and therefore an increase in the total food supply and *Less exposed food poisoning.

IITA (2005) pointed out the following management skills in plantain biscuit processing enterprise. Margarine is mixed with sugar until a smooth homogenous mixture is attained. The cream is thoroughly mixed until it starts tending towards a whitish yellow colour. Eggs are whipped and gently blended with the resultant cream. Plantain flour is first mixed with baking powder and milk and allowed to stand while preparing the cream. The mixture is added to the already prepared cream and whipped egg. The whole mixture is further mixed thoroughly with the addition of water to obtain dropping paste. Mixed fruits and few drops of food colour and flavour are then added, to improve the appearance of the final product. The batter produced is poured into greased baking pans to 2/3 full. Baking pans of different sizes are used and these include 10x 8x 2cm, 8x 4x 3cm and 6x 4x 3cm, leavening of the dough during baking is to avoid spill-over. The paste is baked with the aid of a commercial gas oven for about 60- 75 minutes at 250°C. Baking time depended on the size of the baking pans and temperature. The starch gelatinizes during baking which makes the products to set, thereby giving a light product. The product is removed from the oven prior to removing them from the baking pans. The products are allowed to cool, the aim of cooling is to lower the temperature of the product without much loss in mixture. This is achieved by subjecting the product to a counter-current of air conditioned to about 25°C and 50°C, relative humidity. The time required for cooling the products are about 45minutes for 155g sample and 205minutes for 310g sample. Cooling can also be achieved under ambient temperature, but more time will be required. Biscuit of known weights is packaged in polythene bags and stitch with stitching machine. The package biscuit are labeled and stored in cool dry place.

Statement of the Problem

The high population and economy of Rivers State, especially Port Harcourt where most of the out-of-school youth live is favourable for prospective industrialist. The out-of-school youths could exploit this situation to float small-scale enterprise and become self-employed. Floating a profitable or productive enterprise is a function of well articulated and functional training for acquisition of the relevant skills. Most out-of-school youths have the problem of insufficient training. Commenting on the relevance of skill training, Olaitan, Nwachukwu, Igbo, Onyemachi and Ekong (1999) stated that training will expose trainees to knowledge and skills in jobs related situations using functional training modules in an environment that is same with work situation.

The researcher observed that the inability of out-of-school youths to establish small-scale enterprises of their own hinged on certain conditions that prevent them from succeeding. These include the non-availability of agricultural processing training centre in Rivers State and facilities for training. Most of the out-of-school youths cannot help themselves financially due to their poor parental background; and most of them are not academically strong as to further their academic ambitions in universities. This group of youths therefore continues to roam the streets of major cities in Rivers State, such as Port Harcourt, Onne, Eleme, and Ahoada in search of white collar jobs which are not available. They become involved in crimes,

such as kidnapping, assassination and aimed robbery. These anti-social behaviours have been of great concern to government, the society and parents in Rivers State.

In Rivers State, abundant plantain fruits are produced all over the Local Government Areas, which according to Simonds (2008), could have been utilized by these out-of-school youths if exposed to training. With the above constraints, it is evident that it would be difficult for the out-of-school youths to be self-employed beyond their present condition if there are no interventions. It therefore became justified that efforts should be made to provide training modules for training of out-of-school youths on acquisition of skills in plantain biscuit processing enterprise. This study was therefore designed to fill the gap.

Purpose of the Study

The purpose of the study was to identify the needed training module for skill acquisition in plantain biscuit processing for out-of-school youths in Rivers State. Specifically, the objective of the study is to develop training modules for out-of-school youths skill acquisition in plantain biscuit processing enterprise.

Research Question

What are the needed training modules for skills acquisition in plantain biscuit processing for out-of-school youths in Rivers State?

Hypothesis

There is no significant difference in the mean responses among stakeholders (Home Economics Teachers, Extension Agents and IITA staff) on the training module needed for skills acquisition in plantain biscuit processing for out-of-school youths in Rivers State.

METHODOLOGY

The study employed research and development (R & D) design. The population comprised 589 respondents drawn from IITA Onne Office Rivers State, Agricultural Extension Agents from Rivers State Agricultural Development Programme (RSADP): and Home Economics Teachers from Rivers State Senior Secondary Schools Board (RSSSSB). The sample size consists of 269 out of which 20 from IITA, 29 Agricultural Extension agents and Yaro Yamen Formula was used to choose 158 out of 498 Home Economic Teachers. Data were collected by use of questionnaire titled "Skill Acquisition Training Modules Questionnaire (SATMQ)". The instrument was used to elicit opinions from the respondents, on the following skills planning, management, organizing, marketing, material resources, waste and by-products management, maintenance of facilities and safety practices, instructional training programme plan, instructional plan, and instructional training procedure. The (SATMQ) was subjected to face and content validation by experts in Home Economics, University of Uyo, two from IITA Onne office, Rivers State, two from Agricultural extension Agents (EAs) of (RISADEP). The reliability of the instrument was tested using 20 respondents who were not part of the sample, but equivalent in all respects using test-retest method. Cronbach's Alpha reliability estimate was employed and a reliability coefficient of 0.977 was obtained which was considered adequate for the study. The researcher personally administered the questionnaire with the help of trained research assistants. The completed questionnaire from the respondents was collected through the same process and a 90% rate of return was recorded. The results were analysed using mean and (ANOVA).

Research Questions 1: *What training modules can be packaged for out-of-school youths for skills acquisition in plantain biscuit processing enterprise?*

Data for answering the above research question are presented in Table 1

Table 1: Training modules in plantain biscuit processing Enterprise

N=205			
Modules	Module Items	Mean \bar{x}	Remarks
Modules A	Planning skills in plantain biscuit processing enterprise (6 skill items)		Level of Need
A1	Formulation of specific objectives for the products processing enterprise	3.96	Needed
A2	Revision of the formulated objectives with changes in innovations in plantain biscuit processing enterprise.	3.87	Needed
A3	Identification of equipment needed for specific processing operations (e.g. mixer, dryer and room temperature thermometer)	3.96	Needed
A4	Budgeting for the purchase of processing equipment needed.	3.94	Needed
A5	Provision of storage facilities (warehouse) needed for storing materials and equipment.	3.90	Needed
A6	Identification of sources of market for the processed plantain biscuit.	3.85	Needed
Module B	Management skills in plantain biscuit processing enterprise (16 skill items)		
B1	Collection of plantain flour from the store.	3.84	Needed
B2	Creaming and Dough preparation to produce a uniform mixture.	3.82	Needed
B3	Margarine is mixed with sugar until a smooth homogeneous mixture is obtained.	3.56	Needed
B4	Eggs are whipped and gently blended with the resultant cream.	3.61	Needed
B5	Plantain flour is first mixed with baking powder and milk and allowed to stand while preparing the cream.	3.71	Needed
B6	The mixture is added to the already prepared cream and whipped eggs.	3.89	Needed
B7	Mixing of fruits and few drops of food colour and flavour are then added, thoroughly mixed with the addition of water to obtain a dropping paste.	3.65	Needed
B8	The batter produced is poured into greased baking pans to 2/3 full	3.58	Needed
B9	Baking pans of different sizes are used and these include 10 x 8 x 2 cm, 8x4x3cm and 6x4x3cm, 18 x	3.60	Needed

B10	14 x 10cm A little space is left to allow for the leavening of the dough during baking avoiding spill-over	3.85	Needed
B11	The paste is baked with the aid of a commercial gas oven for about 60-75 minutes t 250°C	3.66	Needed
B12	Baking time depended on the size of the baking pans and temperature.	3.86	Needed
B13	The products are removed from the oven prior to the removing them from the baking pan.	3.80	Needed
B14	The times required for cooling the products are 45 minutes for about 155g sample and 205 minutes for 310g sample.	3.66	Needed
B15	It is obvious that cooling time depends on the size of the biscuit.	3.83	Needed
B16	Biscuit of known weights are packaged in polythene bags and store in cool dry place.	3.79	Needed
Module C	Organizing skills in plantain Biscuit processing enterprise (4 skill items)	\bar{x}	
C1	Building plantain biscuit processing enterprise in line with specifications	3.88	Needed
C2	Registration of the biscuit processing enterprise with relevant bodies and start off the enterprise	3.93	Needed
C3	Provision of suitable machine tools and materials for processing high quality plantain biscuit	3.89	Needed
C4	Coordination of the activities of the workers to achieve unity of purpose.	3.86	Needed
Module D	Marketing skills in plantain biscuit processing enterprise (6 skill items)		
D1	Market survey is carried out for the of plantain biscuit	3.95	Needed
D2	Prices of the biscuit are fixed according to grade.	3.88	Needed
D3	Advertisement of the biscuit to different buyers and supplying the biscuit to different buyers	3.86	Needed
D4	Recording all sales /financial transactions in their appropriate column	3.88	Needed
D5	Filling bank tellers, receipts and other evidence of payments for account reconciliation	3.76	Needed
D6	Reconciliation of sales and expenditure to determine profits or loss of the enterprise.	3.87	Needed

Module E	Material Resources needed in plantain biscuit processing enterprise (7 skill items)	\bar{x}	Remarks
E1	Land, buildings and structures.	3.83	Needed
E2	Open drums, basins and buckets.	3.80	Needed
E3	Polythene bags of various sizes	3.77	Needed
E4	Files, cabinet, receipts book and stationary	3.61	Needed
E5	Mixer, gas oven and pans of various sizes	3.85	Needed
E6	Power generating set, oil and fuel	3.84	Needed
E7	Dryers [drying machine] stitching machine, and thermometer.	3.80	Needed
Module F	Waste and by-product management skills (4 skill items)		
F1	Cleaning in and around the plantain biscuit factory	3.96	Needed
F2	Installation of waste collecting and disposal facilities	3.94	Needed
F3	Provision of adequate ventilation to the processing room	3.91	Needed
F4	Draining the floor of the processing room	3.87	Needed
Module G	Maintenance of facilities and safety practices skills (5 skill items)		
G1	Keeping to guidelines or instructions while operating processing machine	3.92	Needed
G2	Carrying out regular maintenance exercise on facilities used for producing biscuit	3.97	Needed
G3	Identification of hazards in the factory	3.91	Needed
G4	Wearing suitable apron while at work.	3.98	Needed
G5	Provision of first-aid and fire-fighting facilities.	3.94	Needed
Module H	Instructional training procedures skills 6 skill items)		
H1	Obtaining a copy of the programme plan or module meant for training persons in plantain biscuit processing enterprises.	3.84	Needed
H2	Studying the module and tasks or clusters of the programme carefully and be familiar with the contents.	3.88	Needed
H3	Ability to state general and specific objectives of the training programme bearing in mind the modules, tasks and clusters.	3.85	Needed
H4	Identification of relevant teaching materials [text book, bulletin or journals] needed for the understanding of the content.	3.88	Needed
H5	Planning your lesson or instruction for each task or cluster to cover both theory and practical activities.	3.93	Needed
H6	Identification and arrangement for classroom environment or laboratory where instruction will take place.	3.91	Needed

Module I	Instructional planning (components) (5 skill items)	\bar{x}	Remarks
I1	Identification of the objectives and unit contents to be taught in plantain products processing enterprise.	3.90	Needed
I2	Teachers/ trainers activities for the unit.	3.87	Needed
I3	Students/ learners activities within the unit.	3.83	Needed
I4	Instructional materials for the unit.	3.85	Needed
I5	Method of evaluating the unit.	3.63	Needed
Module J	Instructional training procedures implementation (9 skill items)		
J1	Teaching trainees from known to unknown concepts using modules (A – J) in plantain biscuit processing enterprises.	3.91	Needed
J2	Explanation of different terms in plantain biscuit enterprise,	3.90	Needed
J3	Explanation to the trainees such facilities and equipment needed for specific operations and how they can be used in plantain biscuit processing	3.96	Needed
J4	Demonstration of the skills step-by-step while the trainees observe.	3.95	Needed
J5	Causing the trainees to learn by doing what the instructor demonstrated while the instructor observes.	3.95	Needed
J6	Correction of trainees mistakes during practice of any skill	3.97	Needed
J7	Encouragement visits to other biscuit processing enterprise and write report of the visits for assessment.	3.81	Needed
J8	Discussions of common hazard trainees are likely to experience in their environment.	3.88	Needed
J9	And suggestion of possible solutions to the problems	3.85	Needed

Data presented in Table 1 showed that the six planning skills (module A) in plantain biscuit processing had mean values above the mean between 3.50-4.00, similarly, the sixteen management skills (module B); four organizing skills (module C); six marketing skills (module D); seven material resource skills (module E); four waste and by-product management skills (module F); five maintenance of facilities and safety practices skills (module G); six instructional training procedures skills (module H); five instructional plan (component) (module I) and nine instructional training procedure implementation (modules J) all had mean values above between 3.50-4.00.

Deduction from the analysis shows that all the skills in modules A-J are all highly needed skills for the out-of-school youths training in plantain biscuit processing enterprise.

Table 2. ANOVA on Training Module in Plantain Biscuit Processing Enterprise

Module S/N	Module	Items	Group	Sum of square	df	F	N=203	
							Sig	Rk
A	Planning skills in plantain biscuit processing enterprise (6 skill items)		Between	2.70	2	1.030	.395	NS
			Within	264.46	202			
			Total	267.15	204			
B	Management skills in plantain biscuit processing enterprise (16 skill items)		Between	199.02	2	2.086	.127	NS
			Within	5765.69	202			
			Total	5884.70	204			
C	Organizing skills in plantain biscuit processing enterprise (6 skill items)		Between	4.05	2	1.25	.290	NS
			Within	328.44	202			
			Total	332.49	204			
D	Marketing skills in plantain biscuit processing enterprise (6 skill items)		Between	14.65	2	1.58	.208	NS
			Within	936.47	202			
			Total	951.12	204			
E	Material resources needed in plantain biscuit processing enterprise (7 skill items)		Between	7.54	2	1.17	.312	NS
			Within	649.71	202			
			Total	657.25	204			
F	Waste and by-product management skills (4 skill items)		Between	2.44	2	1.09	.340	NS
			Within	226.67	202			
			Total	229.10	204			
G	Maintenance of facilities and safety practices skills (5 skill items)		Between	.53	2	.502	.606	NS
			Within	107.06	202			
			Total	107.59	204			
H	Instructional training procedures skills (6 skill items)		Between	10.50	2	1.380	.254	NS
			Within	768.75	202			
			Total	779.25	204			
I	Instructional plan (components) (5 skill items)		Between	2.58	2	1.076	.343	NS
			Within	336.01	202			
			Total	339.59	204			
J	Instructional training procedures implementation (9 skill items)		Between	5.60	2	.931	.396	NS
			Within	608.01	202			
			Total	613.61	204			

Significant at .05 alpha level: critical F-value = 3.040 df = 2 and 202

The ANOVA of Table 2 reveals that the calculated F-value of 1.030 module A; planning skills, 2.086 management skill module B; 1.25 module C; organizing skill, 1.58 module D; marketing skills, 1.17 module E; material resources 1.09 module F; waste and by-product management skills, .502 module G; maintenance of facilities and safety practices skills, .380 module H; instructional training procedures skills, 1.076 module I; instructional components and .931 module J; instructional training procedures implementation skills, are all less than the critical F-value(F-tabulated) of 3.040 at .05 alpha level with 2 and 202 degree of freedom. The null hypothesis (H_{01}) of no significant difference in the responses of home economic teachers, extension agents (EAs) and IITA staff; on the training modules packaged for skills acquisition in plantain biscuit product processing enterprise was therefore upheld.

Deduction from the hypothesis tested indicated that, the 10 modules are needed for training of out-of-school youths for skills acquisition in plantain biscuit processing enterprise.

DISCUSSION OF FINDINGS

The findings of this study have been arranged and discussed according to the research question and hypothesis formulated. The research question is discussed first followed by the hypothesis.

The findings of this study highlighted all the ten modules with 68 corresponding skill needed for the training of out-of-school- youths for skills acquisition in plantain biscuit processing enterprise. The ten modules with the sixty eight corresponding skill items were needed because, the out-of-school youths will need skills in planning, management, organising, marketing, material resources handling, waste and by-products management, safety practices and instructional training procedures for success in plantain biscuit processing enterprise. On planning, skills needed for plantain biscuit processing, the respondents opinion were in consonance with the observations of Olaitan and Mana (2001) that planning of any farm operation should incorporate, management skills such as formulation of specific objectives, reviewing the formulated objectives periodically with changes in innovations, drawing up programme plan for the enterprise, selection of site for processing operations, deciding on the type of processing to adopt in his enterprise, making of budget for the processing plan, planning for the procurement of the processing equipment material, among others.

On the management skills needed in plantain biscuit, the findings corroborated the views of Hosene (2000) & Potter (2004) who summarized the steps involved in modern or mechanized processing of plantain biscuit to include, collection of plantain flour from the store, creaming and dough preparation to produce a uniform mixture, mixing margarine with sugar until a smooth homogeneous mixture is obtained, whipping eggs and gently blending with the resultant cream, mixing plantain flour first with baking powder and milk and allow to stand while preparing the cream addition of the mixture to the already prepared cream and whipped eggs, addition of mixed fruits and few drops of food colour and flavour, mixing the whole mixture further with the addition of water to obtain a dropping paste, pouring batter produced into a greased baking pans to 2/3 full, allowing a little space for the leavening of the dough during baking to avoid spill-over, having baking pans of various sizes such as 10 x 8 x 2cm, 8 x 4 x 3cm and 6 x 4 x 3cm and other skill items.

The findings on organizing are in consonance with the views of Sanni et al (2005), who highlighted some steps in organizing plantain biscuit products to include, building plantain products processing enterprise in line with specifications, registration of the products processing enterprise with relevant bodies and start off the enterprise, provision of suitable machine tools and materials for processing high quality plantain biscuit and coordination of the activities of the workers to achieve unity of purpose. The findings on marketing skills in plantain biscuit in accordance with Food and Agriculture Organization Report (FAO 2002): the report stated that specialized marketing management skills needed by plantain biscuit marketers for profitable plantain products, include fixing prices of the products according to grade, advertising products to different buyers and supplying products to different buyers, recording all sales and financial transactions in their appropriate column, reconciliation of sales and expenditure to determine profits or loss of the enterprise. The findings on material resources needed agreed with the opinion of IITA (2006) that land, building and structures, open drums, basins and buckets, polythene bags of various sizes, mixer, gas oven and pans of various sizes, power generating set, oil and fuel, dryers, stitching machine and thermometer, are material resources needed in plantain biscuit processing enterprise. On waste and by-product management skills the findings are in agreement with Tubman (1999) and Sanni et al (2005) that processors need to clean in and around the plantain factory, installation of waste collection and disposal facilities, provision of adequate ventilation to the processing room and draining the floor of the processing

room among others if the product is to be of high quality. On maintenance of facilities and safety practices skills, such as keeping to guidelines or instructions while operating processing machine, carrying out regular maintenance exercise on facilities used, identification of hazards in the factory, wearing suitable apron while at work and provision of first-aid and fire-fighting facilities were also highlighted by Sanni, et al (2005) as very necessary in a modern processing factory.

The findings on instructional training procedures needed in consonance with the views of Olaitan and Onuka (2007) which highlighted some steps and training procedures required to guide instructors on how to train individuals in acquiring skills in any processing enterprise. Such training procedures include teaching from known to unknown concepts; using modules or programmes plan; definition of key terms used in the enterprise, demonstration of the skills involved in the enterprise; testing trainees on the practice of the skills learnt and others.

CONCLUSION

This paper has established that the effective utilization of skill acquisition will be a strong combating tool for poverty reduction and empowerment among out-of-school-youths. The following has been deduced from the findings of this study that skill acquisition will contribute significantly to the society in terms of reduction of joblessness and crime. Unemployment rate of out-of-school youths would be reduced, if government agencies in-charge of youth's skills acquisition and employment, use identified training modules. Training information on training module for out-of-school youths for skill acquisition in plantain biscuit has been identified. The rating of home economics teachers, agricultural extension agents and International institute for Tropical Agriculture (IITA) staff, on the training modules packaged for out-of-school youths for skill acquisition was the same in spite of their different areas of operation.

RECOMMENDATIONS

Based on the above findings, it is recommended among others to improve skill acquisition among out-of-school youths for their empowerment that:

- The government of Rivers State should direct the management of Skills Acquisition Centres (SACs) to integrate the identified and packaged training modules into skills acquisition programmes.
- The Niger Delta Development Commission (NDDC) should make use of the identified plantain biscuit processing enterprise in training their youths in the entire states that produces oil in the country.
- The entrepreneurs in the plantain processing industry in the state should be allowed access to the skill items in the training modules, as identified in this study as to enable them improve on their production.
- The government should make the findings of this study available to the media for dissemination to the general public including out-of-school youths.

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