

Effects of Adult Literacy Programme on Acquisition of Cake Baking Vocational Skills among Prison Inmates in Plateau State, Nigeria

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Abstract. This study investigated the Effects of Adult Literacy Programme on Acquisition of Cake Baking Vocational Skills among Prison Inmates in Plateau State, Nigeria. Based on the aim and objectives of the study, two research questions and two hypotheses were postulated to guide the study. The study adopted the non-equivalent pre-test, post-test experimental group research design, whereby participants were assigned to experimental and control groups. The population of the study was made up of 1474 inmates from two selected prisons in Plateau State, comprising Jos and Lamingo. A sample of 40 convicted prison inmates were randomly selected for the study. They represent 20 experimental and 20 control groups. The instrument for data collection was Prison Inmate Skill Acquisition Preference Indicator (PISAPI) with content validity index of 0.80 and a reliability index of 0.78. Descriptive statistic of mean and standard deviation was used to answer the research questions and inferential statistics of t-test was used to test the hypotheses at 0.05 level of significance. Results revealed that prison inmate in the experimental group performed better in cake baking and event decoration than inmate in the control group. The researcher recommend that teachers should use more of Adult literacy program in the prison on cake making and

event decoration should be encouraged which will help equip the inmates face the economic challenges of the society and be self-employed.

Keywords: Prison inmate, Adult literacy program cake baking, vocational skills and prison inmates

1. Introduction

Vocational skill acquisition is an economic development practice that enhances productivity and job creation, especially among prison inmates. Vocational education is any learning experience that is relevant in the world of work. This may take place in a variety of contexts including work places and educational settings. There are different types of vocational skills within the prisons in Plateau State which include the following; carpentry, wood work, tailoring, welding, soap making, hair dressing and shoemaking. However, vocational needs assessment into the prisons in Plateau State indicated that vocational skills such as baking and event decoration training are not available. A need analysis report conducted by the researcher among the prison inmates in the study area indicates that a majority of them are interested in baking. Baking skills are vocational skills that are relevant and profitable in recent times. Ceserani, Kinton and Foskett (2000) defined baking as the cooking of food

by dry heat with an oven in which the action of the dry convection heat is modified by steam. This produces crisps and dry food that are marketable and can generate employment. Baking involves mixing or otherwise (combining of) ingredients such as plain flour, sugar, eggs, butter, baking powder, flavor etc appropriately to form a dough for bread, meat pie, cookies and other pastry products. Baking industry is a money spinning industry that cuts across all ages. Baked products are gaining popularity as they are considered the most staple meal due to busy schedules of people today.

Time keeping is very important in cake baking. Time keeping especially in mixing the dough and the eventual baking in the oven must be observed to avoid overheating the dough. Dough can also be under heated example bread, if the initial heat is low the dough will fall and be damaged. An event decorator must also observe to ensure that the event venue is completely decorated before the stipulated time for occasion. Time is needed to organize the ingredients and in preparation for baking. Similarly, time is required to prepare a particular venue for an event. Vocational skill acquisition will reduce the crime rate in the society this is because people will be gainfully engaged in meaningful money generating enterprise. Vocational skills acquisition will not only reduce crime but could promote economic growth and social development as well as enable prison inmates to engage in productive ventures that are profitable. Intervention in prison education and vocational training could be a worthwhile venture.

Adult literacy education is any learning or educational activity that occurs outside the formal school system and is undertaken by people who are considered to be adults in that society. The importance of adult literacy education cannot be underestimated; this is

because it brings about the development of human potentials that are central to all other developmental efforts. To earn a living, persons especially the prison inmates need some form of literacy to acquire relevant vocational skills and to have proficiencies in them.

1.2 Statement of the Problem

The society has negative perception and attitude towards prison inmates and ex-convicts. Serving prisoners and ex-convicts continue to suffer deprivation, outright rejection, victimization and stigmatization from the society and especially the people they once lived with. Some of the reasons people engage in crimes and criminal activities include unemployment, poor literacy levels, poverty, lack of vocational skills, peer pressure among others. The rise in crime and consequently imprisonment in Nigeria today can be traceable to the problems above. Cake Baking are among some of the vocational skills that are marketable in the Nigerian society today. This skills can flourish in rural or urban settings and prison inmates can start the business upon release from incarceration, thus transiting from a life in prison into living successfully within the society they were once members.

1.3 Aim and Objectives of the Study

The purpose of this study was to investigate the effects of adult literacy programme on acquisition of Cake Baking vocational skills among prison inmates in Plateau State. The specific objectives of this study are to:

- Ascertain the level of cake baking vocational skills of prison inmates in Jos metropolis
- Find out whether prison inmates can identify and use baking equipments correctly

- Find out the effects of adult literacy programme on the ability of prison inmates to correctly mix raw materials for baking

1.4 Research Questions

The following research questions were formulated to guide the study:

- To what extent would adult literacy programme affect the ability of prison inmates to acquire baking skills?
- How would adult literacy programme affect the ability of prison inmates to handle equipments in baking and event decoration in the experimental group?

1.5 Hypotheses

The following hypotheses were tested at 0.05 levels of significance:

- There is no significant difference between the pre-test and post-test mean scores of prison inmates ability to identify and use tools for Cake baking in the experimental group.
- There is no significant difference between the pre-test and post-test mean scores of prison inmates ability to mix raw materials in Cake baking in the experimental group.

1.6 Theoretical Framework

This study is hinged on the Human Capital Theory propounded by Schultz in 1961. However, Becker and Mincer contributed to the evolution of this theory in 1964 and 1974 respectively. The theory depicts that investments in individuals can be mathematically measured based on the economic value they are able to contribute to the society. Therefore, education (formal and non-formal), job training and marketable talents are ways in which humans increase their ability to acquire knowledge and generate higher wages.

1.7 Significance of the Study

The findings of this study will hopefully be of benefit to the following stakeholders: the prison inmates, their family members, the prison authority, the Government, and the society at large.

There are quite a number of reasons why people commit crimes, get imprisoned and even re-offend. Some of such reasons include unemployment, stigmatization, illiteracy and victimization. If prison inmates are provided with vocational skills that can enable them re-integrate into the society upon release from prison, especially the vocational skills with minimal startup capital like event decoration and baking skills, this will help reduce the incidence of re-offending. When inmates are engaged in productive literacy and vocational skill that lead to economic and social independence, it will bring about reduction in idleness and consequently may reduce the tendencies to engage in crimes. This is because upon release from incarceration, the inmates could start a business that could make them employable or become independent entrepreneurs and even employers of labour. The vocational skill training of prison inmates may increase their choice of employment after completion of their term of imprisonment which may eventually help them contribute positively to national development (instead of being nuisances to the society). This will hopefully help them to adjust fully into the society knowing full well that there is dignity in labour.

Finally, the outcome of this study if implemented will significantly help reduce the crime rate in the society and may also reduce the tendencies to re-offend due to lack of proper engagement in a meaningful trade since they may return to the society well skilled, reformed and empowered to face the challenges of living.

1.8 Scope of the Study

The study was delimited to Jos and Lamingo prisons in Plateau State. The study did not cover other prisons in Plateau State such as Pankshin, Langtang, Shendam and Wase prisons. The study was restricted to convicted prison inmates serving jail term of six months to one year only and not those serving long term of one year and above. The study was further delimited to vocational training in Cake baking.

2. Conceptual Clarifications

2.1 Concept of Vocational Skill Acquisition

Skill acquisition is a means of providing the opportunity to people to make maximum contribution to their own development and to the self-sustaining development of the community. According to Emeka (2011), skill acquisition is a process whereby individuals acquire skills that they can use to impact their generation. Skill acquisition is not for the poor or middle class individuals only but for everyone. It is relevant for career and or professionals as well as dropouts or individuals who cannot further their education due to certain constraint. Skills acquired make individuals versatile, self-sustaining and independent. Tamaraye (2011) said that; through skill acquisition, creativity, initiative, capability, commitment and empowerment, skills are developed or achieved. It is also a means of realizing human energy by providing an opportunity for people to maximize contribution to their own development and to the self-sustaining development of their communities. Vocational skill acquisition training is aimed at transforming the human person so as to bring about his or her potentials and empower others to excel in life. Training for skill acquisition also enables individuals to become independent and self-reliant rather than be a liability to his or her family or community.

Vocational skill acquisition involves training for specific career or trade. It focuses on practical applications of skills learned and is generally unconcerned with theory or traditional academic skills (Doak, 2011). This also provides a link between education and the working world. Similarly, this form of training is usually provided within or outside the conventional learning environment. Vocational skill acquisition training emphasizes skills and knowledge required for a particular job function (such as event management, carpentry). It is also referred to as vocational education or technical education, which aims at equipping people with knowledge, skills and or competence required in particular occupations or more broadly, in the labour market. This is aimed at equipping people with skills that will enable them get good jobs in the modern world and to face the key challenges posed by globalization (United Nations, Educational, Scientific and Cultural Organization UNESCO, 2012).

According to Onah (2000), skill acquisition is the willingness to and ability of an individual to seek investment opportunities to establish as well as engage in a skill that will enable him become self-reliant and also empowers people in diverse skills. Thus, they can become self-employed or employers of labour. The European Centre for the Development of Vocational training (2013) is of the view that vocational skill acquisition training can be formal, non-formal or informal and can take place in education and training institutions, at work places within the informal and traditional apprenticeships and in everyday life. These involve the acquisition of technical and non-technical skills, in addition to general education that are supported by acquiring awareness, knowledge, skills and attitudes relating to occupations in various sectors of economic and social life.

2.2 Baking Skill

Baking is the technique of cooking food by dry heat in an enclosed oven, hot sand or stove in which the action of the dry convention heat is modified by steam. Baking is a combination of different ingredients and skills. The dry heat of baking transforms the ingredients in the mixture which in turn changes the outer layer into brown thereby making the baked product edible attractive and tasty. This procedure can be a lot of fun when the baker is able to painstakingly follow the instruction. The baking business is a lucrative and moneymaking venture that can generate income for the baker, his or her community and the nation at large. Baking industry has an important place in the economy of any nation. This is because people consume baked products so massively due to easy access, low price, safety of time and high nutritional value. With the high rate of busy schedules of people generally, baked products continue to gain popularity.

There are two methods of baking identified by Baking Skills Manual (2013). They include; dry baking; when baking, steam rises from water content of the food. This steam combines with the dry heat of the oven to cook the food .Examples are cakes, pastries etc. Increased humidity baking; when baking certain foods, the oven humidity is increased by placing a bowl of water or injection-steam into the oven thus increasing the water content of the food. The purpose of the prison business is to train the inmates to have livelihood skill, develop the habit of diligence and cultivate their bodies and mind, so that they can adapt to the normal life of the community.

3. Methodology

3.1 Research design

This study employed the quasi experimental research design. Specifically the non-equivalent pre-test, post-test control group design was adopted. According to Awotunde, Ugodolunwa and Ozoji (2002), quasi experimental research designs are utilized in order to carry out a random assignment of subjects into groups.

Population of this study comprised all convicted prison inmates in Lamingo and Jos prisons, Plateau State. The Lamingo and Jos prisons have a total number of 1474 prison inmates serving various jail terms. The population comprises 668 convicted (both long and short terms) 570 awaiting trial, 31 life imprisonment, and 205 condemned. Similarly, out of the convicted prison inmates, 165 are serving short term of six months to one year; while the remaining 503 are serving long term of one year and above. The population distribution is presented below:

The sample for the study comprised 40 convicted inmates who are serving short jail term of six (6) months to one year, that is, 20 from Jos and 20 from Lamingo prisons who have functional literacy and who may not have acquired any vocational skill before, and may be interested in acquiring vocational skill in baking and event decoration. There are 615 convicted prison inmates in Jos prison and 53 in Lamingo prison making a total number of 668 convicted inmates in both prisons. Out of this number, 153 are serving short term of six months to one year; while 515 are serving long term of One year and above. The researcher utilized those convicts who will be released between six months to one year. This is to enable the inmates practice the trade immediately without forgetting what they learnt. The choice of Jos and Lamingo prisons is because both meet the criteria for choosing participants for the study. The inmates in Lamingo prison are all convicted short term

and will be released between six months to one year. 165 prison inmates serving short term are in the Jos prison and so selecting the sample for the study did not pose much problem.

3.2 Sampling Technique

In selecting samples for the study, two sampling techniques were employed. They include the simple random and the purposive sampling techniques. Awotunde et al. (2002) asserted that after obtaining accurate sampling frame and numbering the units it contains serially, a simple random sample can be drawn using the lottery or random number. Therefore, a structured questionnaire developed by the researcher was used as a base line data to select inmates that comprised the sample of the study. This technique was also used in placement of inmates into experimental and control groups.

3.3 Instruments for Data Collection

The instrument used for the collection of data for this study is Baking Skill Test (BST). Baking Skill Test (BST) is a researcher made test comprising the theoretical and practical aspects of the training following step by step procedure. Section A comprised the personal data while section B contained ten test items. The test was used to assess the ability to mention equipments and materials needed for baking, ability to explain the step by step procedure in baking, ability to demonstrate practically the step by step procedure, ability to use the tools and materials orderly, ability to mix the raw materials perfectly, ability to recognize safety tips, ability to maintain quality of products, ability to start and finish well, ability to keep to time and ability to keep

records. This instrument was used during the pre-test and post-test.

3.4 Reliability of the Instruments

Reliability of the Baking Skill Test (BST) was established using test-retest reliability. Furthermore, a pilot study was conducted on inmates in Pankshin prison in Plateau State to ascertain the efficiency and the appropriateness of the instruments. The reliability obtained was 0.850.

3.5 Scoring Procedure

The Cake Baking Skill Test (CBST) is scored based on the following criteria: very high knowledge (90% and above), high knowledge (80%-89%), moderate knowledge (60%-79%), low knowledge (40%-59%) and poor knowledge (0%-39%) respectively.

3.6 Method of Data Analysis

Data for this study was analyzed using descriptive statistic to answer the research questions. The t-test for related sample was used to test the hypotheses formulated to guide the study. This statistic was chosen because of its ability to compare the scores of two groups (experimental and control). The hypotheses were tested at 0.05 level of significance. The research questions were answered using the arithmetic mean and percentages. Hypotheses one, two was tested using related sample t-test

4. Results

This section presented and discussed the result of the study based on the research questions answered and research hypotheses tested at 0.05 level of significance.

Research Question 1: How would adult literacy programme affect the ability of prison inmates to handle equipments in baking in the experimental group?

Table 1: Extent to which Adult literacy programme will affect the ability of Prison Inmates to Handle Equipments in Baking in the Experimental Group

Extent of Knowledge	EXPERIMENTAL GROUP		CONTROL GROUP	
	Pre-test	Post-test	Pre-test	Post-test
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Poor Knowledge	19 (95)	0	19 (95)	0
Low Knowledge	1(5)	0	1(5)	17(85)
Moderate Knowledge	0	0	0	3(15)
High Knowledge	0	6(30)	0	0
Very High Knowledge	0	14(70)	0	0
Total	20 (100)	20 (100)	20 (100)	20 (100)

Note: Percentage is in parenthesis (%)

Table 1 reveals the extent at which Adult literacy programme will affect the ability of Prison Inmates to Handle Equipments in Baking in the Experimental Group. Before intervention, 95% and 5% of the inmates had poor knowledge and Low Knowledge level respectively, Handling Equipments in Baking skills in both experimental and control groups. After intervention, 85% of the inmate in the control group had Low knowledge and 15% had Moderate knowledge Level of Handling Equipments in Baking skills respectively; while 70% and 30% of the inmate in the experimental group had Very High knowledge and High knowledge level respectively in Handling Equipments in Baking skills. This implies that to a high and very high extent Adult literacy programme had affected the ability of Prison Inmates in Handling Equipments in Baking Skills after intervention.

Research Question 2: To what extent would adult literacy programme affect the ability of prison inmates to start and finish the production of baking products after intervention?

Table 2: Extent to which Adult literacy programme will affect the ability of Prison Inmates to Start and Finish the Production of Baking Products after Intervention

Extent of Knowledge	EXPERIMENTAL GROUP		CONTROL GROUP	
	Pre-test	Post-test	Pre-test	Post-test
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Poor Knowledge	0	0	20 (100)	0
Low Knowledge	0	0	0	0
Moderate Knowledge	12(60)	0	8(40)	1(5)

High Knowledge	8(40)	0	12(60)	19(95)
Very High Knowledge	0	20(100)	0	0
Total	20 (100)	20 (100)	20 (100)	20 (100)

Note: Percentage is in parenthesis (%)

Table 2 reveals the Extent to which Adult literacy programme will affect the ability of Prison Inmates to Start and Finish the Production of Baking Products before and after Intervention. Before intervention in the experimental group 60% and 40% of the inmates had moderate and high knowledge of Starting and Finishing skills in the Production of Baking Products respectively while in the control group 40% and 60% of the inmates had moderate and high knowledge of Starting and Finishing skill in the Production of Baking Products respectively. After intervention, 100% of the inmate in the experimental group had very high knowledge Level of Starting and Finishing the Production of Baking Products; while 95% and 5% of the inmate in the control group had Moderate knowledge level and High knowledge level respectively in Starting and Finishing the Production of Baking Products. This implies that to a very high extent Adult literacy programme had affected the ability of Prison Inmates in Starting and Finishing the Production of Baking Products after intervention.

Hypothesis 1: There is no significant difference in the pre-test and post-test mean scores of prison inmates ability to identify and use tools for Cake baking in the experimental group.

Table 3: Summary of t-test Analysis in Pretest and Post-Test Mean Scores of Prison Inmates ability to Identify and Use Tools For Cake Baking in the Experimental Group

Groups	N	\bar{X}	SD	Df	t-cal	P-value
Pre-test	20	3.45				
			0.69	38	-32.894	.000
Post-test	20	9.65	0.49			

Source: Field data 2019

Table 3 reveals the t-test Analysis of Pre-test and Post-test Mean Scores of Prison Inmates ability to Identify and Use Tools for Baking in the Experimental Group. The inmate in Experimental Group had a pre-test mean score ($\bar{X} = 5.60$, $SD = 0.52$) and a post-test mean and a standard deviation score of ($\bar{X} = 15.20$, $SD = 1.55$), the degree of freedom of 18 and a t-test value -18.59 with a p-value of 0.000. Since the p-value is less than 0.05 level of significance, the null hypothesis was rejected. This implies that there is a significant difference in the Pre-test and Post-test Mean Scores of Prison Inmates ability to Identify and Use Tools for Baking in the Experimental Group.

Hypothesis 2: There is no significant difference between the pre-test and post-test mean scores of prison inmates ability to mix raw materials in Cake baking in the experimental group.

Table 4: Summary of t-test Analysis in Pre-Test and Post-Test Mean Scores of Prison Inmates Ability to Mix Raw Materials in Baking in the Experimental Group

ABILITY TO KEEP TO TIME	N	\bar{X}	SD	Df	t-cal	P-value
Pre-test	20	1.20	0.41	38	-24.158	.000
Post-test	20	4.65	0.49			

Source: Field data 2019

Table 4 reveals the t-test Analysis of Pre-test and Post-test Mean Scores of Prison Inmates ability to Mix Raw Materials in Cake Baking in the Experimental Group. The Inmates ability to Mix Raw Materials in Cake Baking had a pre-test mean score ($\bar{X} = 3.10$, $SD = 0.74$) and a post-test mean and a standard deviation score of ($\bar{X} = 8.50$, $SD = 2.01$), the degree of freedom of 18 and a t-test value -7.962 with a p-value of 0.00. Since the p-value is less than 0.05 level of significance, the null hypothesis was rejected.

5. Discussion of results

Table 1 reveals the t-test Analysis of Pre-test and Post-test Mean Scores of Prison Inmates ability to Identify and Use Tools for Baking in the Experimental Group. The inmate in Experimental Group had a pre-test mean score ($\bar{X} = 5.60$, $SD = 0.52$) and a post-test mean and a standard deviation score of ($\bar{X} = 15.20$, $SD = 1.55$), the degree of freedom of 18 and a t-test value -18.59 with a p-value of 0.000. Since the p-value is less than 0.05 level of significance, the null hypothesis was rejected. This implies that there is a significant difference in the Pre-test and Post-test Mean Scores of Prison Inmates ability to Identify and Use Tools for Baking in the Experimental Group. This finding is in line with that of Ajah and Nweke (2017) which revealed that vocational training do not exist in Nigerian prison system such as fashion design, dressing hair salon as well as other inmates in Nigeria.

Table 4 reveals the t-test Analysis of Pre-test and Post-test Mean Scores of Prison Inmates ability to Mix Raw Materials in Cake Baking in the Experimental Group. The Inmates ability to Mix Raw Materials in Cake Baking had a pre-test mean score ($\bar{X} = 3.10$, $SD = 0.74$) and a post-test mean and a standard deviation score of ($\bar{X} = 8.50$, $SD = 2.01$), the degree of freedom of 18 and a t-test value -7.962 with a p-value of 0.00. This implies that there is a significant difference between Pre-test and Post-test Mean Scores of Prison Inmates ability to Mix Raw Materials in Cake Baking in the Experimental Group Since the p-value is less than 0.05 level of significance, the null hypothesis was rejected. This finding agrees with the findings of Asokhia & Agbonluae (2013) which states that rehabilitation services in Nigerian prisons are not international best compliance.

6. Conclusion

Adults literacy programme on acquisition of cake baking vocational skills among prison inmates in Plateau State have been found to be an effective way of job creation and a rehabilitation strategy to make the imprison inmate acquire skills to be self-employed and make them to have daily, weekly and monthly income through cake baking for birthday, anniversaries, valentine and so on.

7. Recommendations

Based on the outcome of this study, the following recommendations were made:

- Prison inmate should be encourage to prepare cakes while in prison
- Government should encourage cake baking vocational skills in the prison of Nigeria
- Government and Non-profit oriented individuals should provide soft startup loan for this inmates after been released from prison.

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