

# UTILISATION OF INSTRUCTIONAL MATERIALS AMONG PROFESSIONAL AND NON-PROFESSIONAL TEACHERS OF AGRICULTURE IN AIMMAWA STATE SECONDARYSCHOOLS

*Mrs. K.G. Farauta*

## **Abstract**

The utilization of instructional materials among teachers has a lot of benefits and the skill of the teacher is dependent on his professionalism. This study sought to determine the frequency of utilization of instructional materials among professional and non-professional teachers of agriculture with one null hypothesis tested at 0.05 level of significance. The population was all the teachers of agriculture (369), while one hundred and ninety two (192) was the sample. Questionnaire was used in data collection, while mean and Z-test were used for data analysis. Results reveal that none of the suggested instructional materials was often used and there was a significant difference in the utilization of instructional materials between professional and non-professional teachers in about seventeen items with their Z-values ranging between 9.308 to -5.423. It is recommended that non-professional teachers should be retrained.

## **Introduction**

The American Heritage Dictionary describes a professional as one conforming to the standards of a profession, which is professional behaviour. Teachers of agriculture can only be called professionals if they conform to the standards, and according to the National Policy on Education (2004), a professional teacher should have at least a Nigeria Certificate in Education (NCE) in the major teaching subject or a degree with a combination of education. Since a professional is a skilled practitioner, it is assumed that at least at the NCE level, one would have acquired basic skills in teaching and in agriculture being the teaching subject.

People generally receive training to enable them enter into their chosen careers in life. Teaching, which is one of the professions one can choose, does have some training needed to acquire basic skills like any profession.

Societal developments in several domains confront schools and teachers nowadays with ever more and various demands (Elchardus, 1994; Hargreaves, 1994). Some of these challenges include the utilization of instructional materials for the benefit of both teachers and students.

In order to meet these challenges, teachers professional development is considered vital (Hoyle, 1989; Vonk, 1989). It is at this level assumed that the professional level of a teacher may affect how he utilizes instructional materials for his students.

Buba (2000), described instructional materials as instructional media which can be human, material or equipment. They serve as good means of supplementing or complementing mere verbalization of factual knowledge and invariably they shift to practical application when used appropriately in the process of teaching and learning.

According to Kemp (1980), the term instructional materials can be used interchangeably with instructional aids, resource materials and learning resources. They all mean forms of information carriers that can be used for teaching and learning. People learn best what they experience and much learning takes place through listening and reading but hearing is likely to be more meaningful and lasting if it is supplemented with experiences through the utilization of instructional materials.

According to Kemp (1980) and Heinrich and Russell (1982), the customary teacher centered methods of instruction have progressively shifted to the application and use of instructional materials not only to enrich instruction but also in student centered learning especially in practical sessions as found in agricultural school farms.

Having been briefly what a professional teacher is and also what instructional materials and their benefits are, the study, was undertaken to find out the frequency of utilization of instructional materials among teachers of agriculture and to see if there was a difference in the rate of utilization between professional, and non-professional teachers.

For the purpose of this research<sup>1</sup> work, one research question and one null hypothesis were tested at 0.05 level of significance.

### The Research Question is

1. What is the frequency of utilization of instructional materials.

### The Hypothesis is

There is no significant difference in the opinion of professional and non-professional teachers on the frequency of utilization of instructional materials.

### Materials and Methods

The study was done in Adamawa State in the Northeastern region of Nigeria, located between latitudes 7° and 11°N and between longitudes 11° and 14°E (Adebayo, 1999). The population for the study comprised of all teachers of agriculture numbering three hundred and sixty nine (369), as reported by the Post Primary Schools Management Board (PPSMB), and in all the one hundred and eight (108) Senior Post Primary Schools in the state.

Stratified random sampling was employed for this study. There are five educational zones in Adamawa State and they were adopted for stratification. All schools were stratified into urban and rural Schools cited in local government headquarters were called urban and others as rural only for the purpose of this study. A simple random sample of teachers was then taken.

In determining the sample of teachers for (his study, the "Yaro Yamane" formula for a finite population was used. The formula as seen in Uzoagulu (1998), is:

$$n = \frac{N}{1 + N(e)^2}, \text{ where}$$

- n = Sample size  
N = The finite population  
e = Level of significance  
I = Unity (a constant)

In applying the formula above on the teachers population, a sample of one hundred and ninety two (192) was arrived at. Data for this work were collected using structured questionnaire for the teachers of agriculture which asked questions on the frequency of utilization of instructional materials. The questionnaire was based on a five point rating scale. The questionnaire had twenty (20) suggested instructional materials on which questions were asked about the frequency of their utilization with the following options provided:

- Often utilized - 4 = Ou  
Utilized - 3 = u  
Moderately utilized - 2 = Mu  
Rarely utilized - 1 = Ru  
Not utilized - 0 = Nu

Questionnaires were administered by the researcher and by the help of two research assistants. They were all returned. Descriptive statistical tool, mean was used to analyze data for answering the research questions while a Z-test was used to test the null hypothesis at 0.05 level of significance. The formula for the Z-test as shown in Cozby (1993), is:

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

N<sub>1</sub>, N<sub>2</sub>

Where,

- X<sub>1</sub> and x<sub>2</sub> = means of two independent samples  
S<sub>1</sub> and S<sub>2</sub> = standard deviations of two independent samples  
N<sub>1</sub> and N<sub>2</sub> = number of observations (sample size) of the two independent samples

The decision rule was that the mean of the five point scale was taken which was two (2). Any item that had a mean of 2 and above was considered as being utilized by the teachers. For the hypothesis, being two tailed in nature, if Z-calculated was greater than the table Z which is ±1.96, the hypothesis was rejected.

### Results and Discussion

After analyzing the collected data it was found that:

- 1) Out of the twenty (20) suggested instructional materials, none was often utilized;
- 2) Six of the suggested instructional materials which included samples of tubers, animal organs,

pamphlets/journals, to sets, video tapes and computer sets were not utilized. These materials had means ranging between 0.22 to 0.55.

- 3) Four of the suggested instructional materials were utilized with means ranging from 3.03 to 3.40.
- 4) The remaining items were either moderately utilized or rarely utilized as seen in table 1.

As regards the findings above, the non-utilization of some of the instructional materials, especially the computers, is in contrast with what Nordheim and Connors (1997), found out, when they investigated the perceptions of agriculture teachers in relation to computers in the classroom. They reported that over 85 percent "of their respondents felt They were competent in using computers and regularly.

The lack of utilization of these instructional materials might not be unconnected with the lack of knowledge about the usage of the materials and the cost of these materials. Again, Nordheim and Connors (1997), in their study further stated that even though the utilization of instructional materials had a lot of benefits among the secondary school teachers and students, sometimes teachers do not utilize them, especially the computers because the hardware and software could be too expensive for agricultural education programmes.

In the study, it was further found that there was a significant difference in the utilization of instructional materials between professional and non-professional teachers of agriculture in about seventeen (17) items out of the twenty (20) suggested. The Z-calculated in the items that showed a significant difference in the mean responses of teachers range between 9.308 to -5.423 (common endoparasites and TV sets), as seen in Table 2. The professional teachers seem to utilize fourteen of the materials more than the non-professional teachers and this might not be unconnected with their professional training.

The implications of the above findings are that non-professional teachers in the field of agriculture might not actually give their students the needed skills because of the utilization of few instructional materials.

It is therefore recommended that only professional teachers should be employed to teach agriculture or non-professionals should be retrained.

## References

- Adebayo, A.A. (1999). Introduction. In A.A. Adebayo and A.L. Tukur (Eds). *Adamawa State in Maps* (pp. 1-4) Yola: Paraclete Publishers.
- Buba, M.B. (2002). Application of instructional materials/media in teaching practice. In E.N. Kanu and A.M. Mamman (Eds.), *Teaching Practice Manual: A Handbook for college Students* (pp. 47- . 49). Yola: Paracelete Publishers.
- Elchardus, M. (Ed.) (1994). *De school Staat Van de Comissie Samenleving - Onderwijs aar de koning Boudewijngs - stitching.* (The School doesn't stand alone, report of the commission society - Education to the Koning Boudewijng Stitching) Brussels - Kapellan: Koning Boudewijng Stitching - Pelckmans.
- Hargreaves, A. (1994). Restructuring post modernity and the prospects of educational change. In P.P. Grimmet and J. Neufeld. *Teacher Development and the struggle for Authenticity, Professional Growth and Restructuring in the Context of Change* (pp.52-78). New York: teachers college.
- Heinrich M. and Russell D. (1982). *Instructional Media and the New Technologies of Instruction.* New York: John Wiley.
- Hoyle, E. (1989). The primary school teacher as a professional. In M. Gallon and A. Blyth. *Handbook of Primary Education in Europe* (pp.415-432). London: David Foulton.
- Kemp, J.E. (1980). *Planning and Production of Audio-Visual Materials* (4<sup>th</sup> Ed.) New York: Harpe and Row.
- Nordheini, G.J. and Connors, J.J. (1997), The perceptions and attitudes of Northwest agriculture Programmes. *Proceedings of the 24<sup>th</sup> Annual National Agricultural Education Research Meeting*, Las Vegas, NV.

Uzoagulu, A.E. (1998). *Practical Guide to Writing Research Project Reports in Tertiary Institutions*.  
Emigu: John Jacobs Publishers Ltd.

Vonk, J.H.C. (1989). *Beginning Teaching, beginning Teachers' Professional Development Analyzed*.  
Amsterdam: Vu uitgeverij.

## Appendix 1

**Table 1: Mean responses of Teachers on the Frequency of Utilization of Instructional Materials**

S/N	Instructional Materials	Mean (x)	Remarks
1.	Samples of farm tools	2.86	Moderately utilized
2.	Samples of fertilizers	3.10	Utilized
3.	Samples of soils	3.40	Moderately utilized
4.	Samples of weeds	2.38	Moderately utilized
5.	Plant samples	2.42	Moderately utilized
6.	Diseased cereal crop	2.42	Moderately utilized
7.	Nitrogen deficient leaf	1.58	Moderately utilized
8.	Sample of cereals	3.64	Utilized
9.	Samples of tubers	1.18	Utilized
10.	Animal organs	1.49	Utilized
11.	Common endoparasites	2.60	Utilized
12.	Textbooks	3.03	Utilized
13.	Radio sets	0.22	Utilized
14.	Posters	2.89	Utilized
15.	Drawings	3.04	Utilized
16.	Good blackboards	2.61	Utilized
17.	Pamphlets/Journals	1.48	Utilized
18.	TV Sets	0.54	Not utilized
19.	Videotapes	0.55	Not utilized
20.	Computer sets	1.08	Not utilized

Table 2: Z-test for the Mean Responses of Teachers on the Utilization of Frequency of Instructional Materials between Professional and Non-professional

S/N	Instructional Materials	X <sub>1</sub>	X <sub>2</sub>	Calculated	Remarks
1	Samples of farm tools	3.21	1.92	9.572	S
2	Samples of fertilizers	2.89	3.71	-6.689	S
3	Samples of soils	3.56	2.96	4.749	S
4	Samples of weeds	2.85	1.08	7.457	S
5	Plant samples	2.81	1.33	6.134	S
6	Diseased cereal crop	2.61	1.88	4.856	S
7	Nitrogen deficient leaf	1.70	1.24	2.900	S
8	Samples of cereals	3.70	3.49	1.809	NS
9	Samples tubers	1.39	0.61	5.447	S
10	Animal organs	1.67	1.00	4.055	S
11	Common endoparasites	3.08	1.27	9.308	S
12	Textbooks	3.21	2.55	3.589	S
13	Radio sets	0.22	0.22	0.037	NS
14	Posters	3.28	1.82	7.950	S
15	Drawings	3.37	2.12	7.465	S
16	Good blackboards	3.09	1.31	8.534	S
17	Pamphlets/journals	1.62	1.10	3.497	S
18	TV sets	0.39	0.96	-5.423	S
19	Video tapes	0.40	0.96	-8.759	S
20	Computer sets	1.04	1.20	-1.354	NS

N<sub>1</sub> = Professional teachers (141), N<sub>2</sub> = Non-professional teachers (S,  $\alpha = 0.05$ ; Z critical =  $\pm 1.96$ ,  $\bar{x}_1$  = mean 1;  $\bar{x}_2$  = mean 2.

S = **Significant**

NS = Not Significant