Professional Competency Improvement Needs of Agricultural science Teachers for Effective Job Performance in Anambra State.

Abstract
The study focussed on professional competency improvement needs of agricultural science teachers for effective job performance in Anambra State. Four research questions guided the study. Descriptive survey research design was adopted. The study was conducted in Anambra state made up of six educational zones. The target population was 189. The population was small and therefore the entire population constituted the sample for the study. A thirty eight (38) structured questionnaire was developed from the literature and used for data collection. Five experts validated the instrument. Split half technique and Cronbach alpha reliability method were involved in determining the internal consistency of the instrument. A reliability coefficient of 0.88 was obtained. The data was analyzed using the mean and improvement needed index to determine the improvement needs of teachers. The difference between the needed mean and performance mean i.e. ($X_N - X_P$) constituted the gap for which improvement was needed by the teachers of agricultural science. It was found out that teachers of agricultural science needed improvement in planning instructions. (8 competency items) implementing instructions, (10 competency items) evaluating instructions, (7 competency items) and helping students manage practical in the farm (12 competency items). It was therefore recommended that the identified professional competencies where teachers indicated need for improvement be packaged into training programme to be utilized in retraining teachers through workshops and seminars.

Keywords: Professional, Competency, Improvement Needs, Agricultural science, Teachers, Job Performance.

Introduction
Agricultural science is one of the subjects taught to students in secondary schools. Agricultural science as reported in National Economic Empowerment strategy (NEEDS) (2005) is the application of scientific principles to the growing of crops and rearing of animals for man’s use. Agricultural science is a blend of many of the basic pure and applied sciences for example botany, zoology, chemistry, and genetics among others. Ifeanyieze and Ukonze (2008) cited a report of the New National Curriculum on Agricultural Science as saying that objectives of senior secondary school agricultural science are to:

- Stimulate and sustain students interest in agriculture
- Enable student acquire basic knowledge and practical skills in agriculture.
- Prepare students for further studies in agriculture.
• Prepare and expose students to occupations and opportunities in the field of agriculture.

For the achievement of these objectives, it is necessary to give due emphasis to the teaching of agricultural science by the teachers and other stakeholders.

A teacher in the view of Obanewa (1994) is someone who has undergone the necessary and recommended training in a teacher preparatory programme and is charged with the full responsibility of managing the classroom in such a way. Olaitain and Mama further stated that the teacher of agricultural science is educated and as such should exhibit the character of an educated person in all areas of life. He must maintain high ethical standard while enjoying good relationship with colleagues and students as well as having absolute self confident. A teacher of agriculture must complete his preparation for his job and keep abreast of the changes in his work through professional improvement activities.

A profession in the view of Hornby (2006) is a type of job that needs special training or skills especially one that needs a high level of education; according to the author, professional involves specified skills that relate to a particular job for the recognition of the individual in a profession. A teacher of agricultural science need to possess both technical and pedagogical competencies that are required by the teaching profession. They include planning instruction, implementing instruction, evaluating instruction and managing principles and practices in agricultural science.

Competencies in the submission of Encarta (2009) is the ability to do something well, measured against a standard, especially ability acquired through training or experience. Also International Labour Organization (ILO) report (2003) posited competency as the knowledge, capabilities and behaviour which someone exhibits in doing his job and which are factors in achieving the objectives pertinent to the teaching strategies. Competency in the context of this study is the knowledge, skills and attitudes which the teacher of agriculture needs for effective teaching of agricultural science in secondary schools.

In Anambra state, it has been observed by the researcher that teachers of agricultural science depend mostly on textbooks and lecture method in imparting information to students. At times they dictate extracts from other learning material such as magazines, Newsletters. The implication of these practices in the view of Olaitan and Mama (2001) is that senior secondary school student’s graduate from school without acquiring the basic competencies that will enable them to fix themselves into
the world of work of agriculture and to make a living. Teachers of agricultural science also impart information in agriculture to students in agricultural science undermining facilities to use for skill development for preparation of students towards gainful employment in agriculture in future. Interaction with some teachers of agricultural science by the researcher through focused discussion revealed that teachers themselves do not acquire adequate competencies in agriculture which they are expected to impart to students. In order to teach agricultural science successfully towards achieving the pragmatic objectives of the subject matter, teachers need improvement in their job.

Improvement involve enhancing the capability of teachers in imparting appropriate knowledge, skills and attitude to students; in agriculture, i.e. a special retraining in technical and pedagogical competencies in agriculture given to teachers to make them perform better.

The purpose of this study therefore, is to identify professional competency improvement needs of agricultural science teachers for effective job performance.

Specifically the study sought to: identify professional competencies in planning instruction; implementing instruction; evaluating instruction and helping students manage practical in the farm, where teachers needed improvement for effective teaching of agricultural science.

Method

Four research questions guided this study. Descriptive survey research design was adopted for this study. Olaitan, Ali, Eyo and Sowande (2000) stated that survey research design is the plan, structure and strategy that the investigator wants to adopt in order to obtain solution to research problems using questionnaire in collecting, analyzing and interpreting the data. The questionnaire developed from literature reviewed was used for data collecting data from teachers of agriculture.

The study was carried out in Anambra state using a population of 189 teachers of agriculture from 158 secondary schools in Anambra state. Two or one teacher per school as the case may be. The population was small and therefore the entire population constituted the sample for the study.

A thirty-eight (38) item structured questionnaire developed from the literature reviewed was used for data collection. The questionnaire was divided into two categories of needed and performance. The needed category was assigned a four
point response option of highly needed (4), averagely needed (3), slightly needed (2) and not needed (1), while the performance category was assigned a four point response option of high performance (HP), average performance (AP), low performance (LP) and no performance (NP), with a corresponding value of 4, 3, 2, and 1 respectively. Five experts validated the instrument; three of them were from the Department of Vocational Teacher Education (Agric), University of Nigeria, Nsukka while two were Chief Supervisors of agricultural education from Anambra State. Their suggestions were used to improve upon the final version of the questionnaire which yielded 38 out of 43 items. Split half techniques and Cronbach alpha reliability method were adopted for determining the internal consistency of the instruments. A reliability coefficient of the 0.88 was obtained. One hundred and eight-nine copies of the questionnaire were administered on the respondents, through the help of three research assistants who were familiar with the area and were trained prior to their assignment.

All the 189 copies of the questionnaire were retrieved and analyzed using weighted mean and Improvement Needed Index (INI) to answer the research questions. To determine the performance gap of teachers of agricultural science, the following steps were taken.

1. The weighted mean of each item under the needed category XN was calculated.
2. The weighted mean of each item under the performance category XP was also calculated.
3. The difference between the two weighted means for each item (XN-XP) was determined.

   a. Where the difference was zero (0) for each item, there was no need for capacity building because the level at which the item was needed as indicated by the weighted mean was equal to the level at which the teachers will perform that particular competency.
   b. Where the difference was positive (+) for any item, there was need for capacity building because the level at which that item was needed was higher than the level at which the teachers will perform the competency item.
   c. Where the difference was negative (-) for any item there was no need for capacity building because the level at which the competency item was
needed was lower than the level at which the teachers could perform the competency item. Source (Olaitan and Ndomi 2000).

Results
The results of the study were obtained from the research questions answered.

Research Question 1
What were the professional competencies in instructional planning, teachers needed improvement?

*Table 1: Performance Gap Analysis of Mean Ratings of the Responses of Teachers on the Professional Competencies in instructional Planning Teachers Needed Improvement.*

<table>
<thead>
<tr>
<th>S/N</th>
<th>Item Statement</th>
<th>XN</th>
<th>XP</th>
<th>(XN-XP)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Identify the topic to be taught during instruction</td>
<td>3.82</td>
<td>2.40</td>
<td>1.42</td>
<td>IN*</td>
</tr>
<tr>
<td>2.</td>
<td>Determine the objective of the topic of instruction</td>
<td>3.48</td>
<td>2.01</td>
<td>1.47</td>
<td>&quot;</td>
</tr>
<tr>
<td>3.</td>
<td>Identify the materials to be used in the instruction</td>
<td>3.39</td>
<td>3.03</td>
<td>0.36</td>
<td>&quot;</td>
</tr>
<tr>
<td>4.</td>
<td>Select relevant materials for instruction</td>
<td>3.00</td>
<td>2.33</td>
<td>1.77</td>
<td>&quot;</td>
</tr>
<tr>
<td>5.</td>
<td>Develop your lesson</td>
<td>2.99</td>
<td>2.45</td>
<td>0.54</td>
<td>&quot;</td>
</tr>
<tr>
<td>6.</td>
<td>Determine the method of instruction</td>
<td>3.36</td>
<td>2.10</td>
<td>1.26</td>
<td>&quot;</td>
</tr>
<tr>
<td>7.</td>
<td>Determine instructional evaluation strategies</td>
<td>3.11</td>
<td>2.60</td>
<td>1.51</td>
<td>&quot;</td>
</tr>
<tr>
<td>8.</td>
<td>Identify records to keep on instruction and evaluation</td>
<td>3.86</td>
<td>2.14</td>
<td>1.72</td>
<td>&quot;</td>
</tr>
</tbody>
</table>

* = Improvement Needed

The data in table one revealed that the performance gap values of all the eight (8) items ranged from 0.36 – 1.77 and were positive.

This performance gap values indicated that the teachers of agriculture needed improvement in all the eight competency items in instructional planning for effective job performance in Anambra state.

Research Question 2
What were the professional competencies in instructional implementation, teachers needed improvement. for effective job performance?

Data for answering the above research question were presented in table 2.

*Table 2: Performance Gap Analysis of Mean Ratings of the Responses of Teachers on the Professional Competencies in Instructional Implementation where they needed Improvement.*
The data in table two revealed that the performance gap values of all the ten (10) items ranged from 0.06 – 1.77 and were positive.

This performance gap values indicated that the teachers of agriculture science needed improvement in all the ten competency items in implementing instruction in agricultural science in secondary schools in Anambra state.

**Research Question 3**

What were the professional competencies in instructional evaluation, teachers needed improvement?

Data for answering the above research question were presented in table 3.

**Table 3:**

*Performance Gap Analysis of Mean Ratings of the Responses of Teachers on the Professional Competencies in instructional Evaluating Teachers Needed Improvement.*

<table>
<thead>
<tr>
<th>S/N</th>
<th>Item Statement</th>
<th>XN</th>
<th>XP</th>
<th>(XN-XP)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Arrange the materials for the lesson in order of use</td>
<td>3.14</td>
<td>2.61</td>
<td>1.53</td>
<td>IN*</td>
</tr>
<tr>
<td>2.</td>
<td>Introduce the objective of the lesson to the students</td>
<td>3.23</td>
<td>3.00</td>
<td>0.23</td>
<td>&quot;</td>
</tr>
<tr>
<td>3.</td>
<td>Determine students entry behaviour</td>
<td>3.11</td>
<td>2.60</td>
<td>0.51</td>
<td>&quot;</td>
</tr>
<tr>
<td>4.</td>
<td>Introduce the lesson</td>
<td>3.98</td>
<td>3.92</td>
<td>0.06</td>
<td>&quot;</td>
</tr>
<tr>
<td>5.</td>
<td>Deliver the lesson content step by step appropriate method</td>
<td>3.11</td>
<td>2.20</td>
<td>0.91</td>
<td>&quot;</td>
</tr>
<tr>
<td>6.</td>
<td>Get student involved through activities</td>
<td>3.44</td>
<td>2.23</td>
<td>1.21</td>
<td>&quot;</td>
</tr>
<tr>
<td>7.</td>
<td>Use relevant materials at appropriate time</td>
<td>3.00</td>
<td>2.33</td>
<td>1.77</td>
<td>&quot;</td>
</tr>
<tr>
<td>8.</td>
<td>Organise practical as demanded by the topic either in groups or individually</td>
<td>3.24</td>
<td>2.84</td>
<td>0.40</td>
<td>&quot;</td>
</tr>
<tr>
<td>9.</td>
<td>Supervise students activities</td>
<td>3.36</td>
<td>2.14</td>
<td>1.22</td>
<td>&quot;</td>
</tr>
<tr>
<td>10.</td>
<td>Respond to students questions appropriately</td>
<td>3.12</td>
<td>2.59</td>
<td>0.53</td>
<td>&quot;</td>
</tr>
</tbody>
</table>

* = Improvement Needed
The data in table three revealed that the performance gap values of all the seven (7) items ranged from 0.44 – 2.43 and were positive.

This performance gap values indicated that the teachers of agriculture science needed improvement in all the seven competency items in instructional evaluating for effective teaching of agricultural science in secondary schools in Anambra state.

**Research Question 4**

What were the professional competencies in helping students manage practical in the farm where teachers needed improvement?

Data for answering the above research question were presented in table 4.

**Table 4:**

*Performance Gap Analysis of Mean Ratings of the Responses of Teachers on the Professional Competencies in helping students manage Farm practical’s Teachers Needed improvement.*
<table>
<thead>
<tr>
<th>S/N</th>
<th>Item Statement</th>
<th>XN</th>
<th>XP</th>
<th>(XN-XP)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Identify practiced activity for student in any area of agriculture.</td>
<td>3.87</td>
<td>2.30</td>
<td>1.57</td>
<td>IN*</td>
</tr>
<tr>
<td>2.</td>
<td>Identify material resources required for implementing the practical work.</td>
<td>2.88</td>
<td>1.38</td>
<td>1.50</td>
<td>&quot;</td>
</tr>
<tr>
<td>3.</td>
<td>Select relevant material for each stage of practical work.</td>
<td>3.76</td>
<td>2.37</td>
<td>1.39</td>
<td>&quot;</td>
</tr>
<tr>
<td>4.</td>
<td>Organise students into groups for practical activities.</td>
<td>2.87</td>
<td>2.13</td>
<td>0.74</td>
<td>&quot;</td>
</tr>
<tr>
<td>5.</td>
<td>Assign responsibility or work Activities to each group.</td>
<td>3.10</td>
<td>2.34</td>
<td>0.76</td>
<td>&quot;</td>
</tr>
<tr>
<td>6.</td>
<td>Instruct students on each group on what to do in practical work.</td>
<td>3.69</td>
<td>1.33</td>
<td>2.36</td>
<td>&quot;</td>
</tr>
<tr>
<td>7.</td>
<td>Direct or emphasis student practical activities.</td>
<td>3.45</td>
<td>1.45</td>
<td>2.00</td>
<td>&quot;</td>
</tr>
<tr>
<td>8.</td>
<td>Record correct work activity or performance.</td>
<td>3.33</td>
<td>1.03</td>
<td>2.30</td>
<td>&quot;</td>
</tr>
<tr>
<td>9.</td>
<td>Assess students performance practically.</td>
<td>3.58</td>
<td>2.77</td>
<td>0.81</td>
<td>&quot;</td>
</tr>
<tr>
<td>10.</td>
<td>Provide knowledge of results to students.</td>
<td>3.19</td>
<td>2.22</td>
<td>0.97</td>
<td>&quot;</td>
</tr>
<tr>
<td>11.</td>
<td>Provide knowledge of skills to students to repeat poor performance or practice of work activities.</td>
<td>3.61</td>
<td>2.12</td>
<td>1.49</td>
<td>&quot;</td>
</tr>
<tr>
<td>12.</td>
<td>Keep records of students’ performance.</td>
<td>3.11</td>
<td>2.10</td>
<td>1.01</td>
<td>&quot;</td>
</tr>
</tbody>
</table>

* = Improvement needed

The data in table four revealed that the performance gap values of all the twelve (12) items ranged from 0.74 – 2.36 and were positive.

This performance gap values indicated that the teachers of agriculture needed improvement in all the twelve competency items in helping students manage practical in the farm for effective teaching of agricultural science in secondary schools in Anambra state.
Discussion of the result

The result of this study on professional competency capacity building needs of Agricultural science Teachers were in agreement with the findings of Aguolu (2004) in his study on competency – improvement needs of Supervisors of teachers of agriculture in primary and post primary schools in federal capital territory, Abuja found out that Supervisors of teachers of agriculture needed improvement in 8 modules with their 97 corresponding supervisors competencies in which supervisors of teachers of agriculture required improvement.

The result of this study were also in conformity with the findings of Sowande (2002) who in a study on technical competency improvement needs of metal work teachers in Nigerian colleges of educations found out that metal work teachers needed improvement in eighty (80) competency items for better performance on the field.

The result of this study were also in consonance with the findings of Abu (2008) who in a study on competency improvement needs of farmers in soil conservation in Kogi State found out that farmers required improvement in 11 competencies in tillage, 57 in manuring and 16 in crop rotation.

The findings of the authors cited above help to add values to the validity of the findings of this study.

Conclusions/Recommendations

From the result of this study it was discovered by the researchers that teachers in Anambra State needed capacity building for effective teaching of agricultural science in secondary schools in the area of planning instruction, implementing instruction, evaluating instruction and helping students manage practicals in the farm; for their professional growth.

If the findings of this study is developed into a capacity building programme for teachers of agriculture it will help them to overcome their inadequacies in the teaching of agricultural science towards the realization of the approved objectives of the subject in secondary schools in the area of the study.
It was therefore recommended that the identified professional competencies where teachers indicated need for capacity building be packaged into training programme to be utilized in training teachers through workshop and seminars.

References


