

Effectiveness of Reflective Teaching Practices on Professional Development of Agricultural Science Teachers in Secondary Schools in Port Harcourt Metropolis, Nigeria.

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Abstract: A study was carried out to determine the effectiveness of reflective teaching practices on teachers professional development among secondary schools teachers in Port Harcourt Metropolis. Descriptive survey design was adopted for the study. The target population was 180 Agricultural Science teachers registered with the Teachers Registration Council of Nigeria in the two Local Government Areas that made up the study area. The sample size was 60, randomly selected from 12 schools. The instruments for data collection were structured questionnaire and interview schedule. The collected data were analyzed descriptively using mean and standard deviation. The findings identified some reflective teaching practices such as peer observation, feedback from students (students evaluation), recording lessons, teachers self report among others as being effective for teachers professional development. Self and students evaluation appeared to be more effective on learning outcome. Peer evaluation was less effective as some teachers were critical and defensive to their peer's evaluation. It was therefore recommended that teachers should be encouraged to analyze both their thought and observation and those of their students and make changes where necessary.

Keywords: Reflective Teaching, Practices, Teacher, Self, Peer.

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I. Introduction

Teaching has recently been designated as a profession and teachers now have the same responsibilities as others engaged in professional work. They have increased level of individual responsibility, accountability and liability. Whilst the notion of practitioner reflectivity is not new, it is argued that teachers in contemporary classrooms now need to undertake their reflections from an increasingly informed personal understanding (Akerson *et al* 2000). The purpose of all the various types of reflection in professional contexts appears to be two fold; to engender change in order to improve the practice (Calder head, 1989, Gray & Kirkland, 2003) and to develop further self knowledge and understanding (Abell *et al*, 1998, Akbari, 2007, Gay & Kirkland 2003). It is therefore, suggested that teachers need to purposely develop, examine, re examine and check both their self knowledge and their capacity to use this knowledge in order to improve their professional practice.

Reflection, in the words of a layman, "... simply means thinking about something," but for some, "it is a well defined and crafted practice that carries very specific meaning and associated action" (Loughran, 2002). Reflective teaching, at a very general level involves "thinking about one's teaching". Reflective teaching is a process where teachers think over their teaching practices, analyze how something was taught and how the practice might be improved or changed for better learning outcomes. Some points of consideration in the reflection process might be what is currently being done, why it is being done and how well students are learning. By collecting information about what goes on in their classroom, and by analyzing and evaluating this information, they identify and explore their own practices and underlying beliefs. This may then lead to change and improvement in their teaching.

Reflective teaching is a beneficial process in teacher professional development, both for pre-service and in-service teachers. Ur (1999) says that the first and most important basis for professional progress is simply the teachers own reflection on daily classroom events. So, she gives emphasis to personal progress through reflection on one's own activities and practices that happened in the class and thinking.

Schon (1993) posited that reflective teaching practice is a continuous process and involves learners thoughtfully considering one's own experience in applying knowledge to practice while being taught by professionals. It helps the individuals to develop their own personality. Jasper (2003) associated reflective teaching practice with lifelong learning resulting in the development of autonomous, qualified and self-directed

professionals, engaging in reflective practice is associated with the improvement of the quality of care, stimulating personal and professional growth and closing the gap between theory and practice.

Lieberman & Miller, (2000) pointed out that the practice of reflective teaching, reflective inquiry, and reflection-on practice, result in gaining of the personal and professional knowledge that is so important to being an effective teacher and in shaping children's learning. Han (1995) stated that the process element of reflection emphasizes how teachers make decisions. Contents stress the substance that drives the thinking and reflection inquiry may set the stage for learning how to be a good teacher.

Reflective teaching practice is a significant element in teaching and learning agriculture. It has also been widely acknowledged by many researchers as an approach that could promote teachers professional development and improves the quality of teaching and learning, Jacobs, *et al.*, (2011) contend that reflective teaching offers teachers the opportunity to renew their practice and to understand the effects of their teaching. They further stated that reflective teaching provides information on how teachers connect with learners meaningfully thus promoting sound teaching and learning practice.

Agriculture in a broad sense involves cultivation of crops, raising and breeding of livestock, processing, storage distribution and marketing. It is the means of boosting food production to take care of the food need of the teeming population, raw materials for agro-based industries and employment to a large number of the population.

In Nigeria, the first objective of agricultural education is to stimulate student's interest in agriculture. But the objective is not being achieved, because instead of students developing interest in agriculture, the reverse is the case. This lack of student's interest in agriculture could be an off-shoot of inadequate curriculum to which they are exposed. Curriculum entails all the activities and learning experiences which learners are exposed to under the guidance of the school. This being the case, there is need to refocus the curriculum for agriculture to include those contents and teaching practices that will increase the level of interest among the students. It is therefore imperative to include reflective teaching practices in teaching and learning agriculture.

Agricultural Science teachers need to question their practices and be open to different possibilities in their teaching experience. Yang (2009) indicates that critical reflection does not come naturally to most teachers, therefore appropriate opportunities for reflection should be explored by teachers. This suggests that reflectivity is a skill that needs to be acquired by learning and not by automatic occurrence. Teacher educators should apply this theory in classroom practice, in order to observe and reflect on the results so that the classroom becomes a kind of laboratory where the teacher can relate teaching theory to teaching practice. By adopting reflective teaching practices, the Agricultural Science teacher triggers interests among the learners so as to enable them perceive the prospects in agriculture.

Research has been conducted on reflective teaching as an essential part in teachers' professional development, (Griffiths 2000; Akbari 2007; Killen 2007; Jacobs, 2011). Very little has been done to investigate the effectiveness of reflective teaching practices on professional development of agricultural science teachers, hence the study. There is an assumption that agriculture science teachers in Port Harcourt Metropolis will automatically reflect on their teaching practices.

Purpose of the Study

The purpose of the is to determine Effectiveness of Reflective Teaching Practices on Professional Development of Agricultural Science Teachers in Secondary Schools in Port Harcourt Metropolis, Nigeria. Specifically the objectives include:

1. Identify various reflective teaching practices adopted by Agricultural Science Teachers among Secondary Schools in Port Harcourt Metropolis.
2. Determine the extent of effectiveness of the identified reflective teaching practices on learning outcome.
3. Determine the strategies for enhancing reflective teaching practices in the study area.

Research Questions

1. What are the various teaching practices adopted by Agricultural Science Teachers among Secondary Schools in Port Harcourt Metropolis?
2. What is the extent of effectiveness of the identified teaching practices on learning outcome?
3. What are the strategies for enhancing reflective teaching practices in the study area?

II. Methodology

The study was conducted in Port Harcourt, metropolis comprising of two Local Government Areas of Port Harcourt and Obio/Akpor in Rivers State, Nigeria. The study design was descriptive survey. The population of the study was 180 agricultural science teachers registered with the Teacher's Registration Council of Nigeria (TRCN). The sample size was 60, randomly selected from 12 schools in the study area. The instruments for data collection were structured rating scale questionnaire and schedule interview duely validated

and reliability coefficient of 0.75 established, using test-retested method. Data collected were analyzed descriptively using mean and standard deviation, with a criterion mean value of 2.50 as the bench mark for decision taking.

III. Result And Discussion

Research Question 1

What are the various reflective teaching practices adopted by agricultural science teachers among Secondary Schools in Port Harcourt Metropolis?

The following are the various reflective teaching practices.

Table 1: Kinds of Reflective Teaching Practices

S/N	Statement	\bar{X}	SD	Remark
1	A written account of experience after each lesson. (Reflective journal/diary)	3.20	0.60	Agreed
2	Self report (self examination and self evaluation)	3.50	0.32	Agreed
3	Peer observation/evaluation	2.00	0.83	Disagreed
4	Collaborative learning	2.60	0.94	Agreed
5	Recording lessons via audio	2.50	0.52	Agreed
6	Recording lessons via video	2.90	0.66	Agreed
7	Students feed back (students evaluation).	3.60	0.30	Agreed
8	Action research	2.50	1.00	agreed

Source: *Field Survey 2019*

Table 1 showed result on the kinds of reflective teaching practices. Students feedback (students evaluation), self report (self examination and self evaluation) and Reflective Journal/diary recorded high mean values (3.60, 3.50, and 3.20) respectively. While recording lessons via video, collaborative learning, recording lesson via audio and action research has less mean values of (2.90, 2.60, and 2.50) respectively, comparable to peers observation/evaluation which had the last mean value of (2.00). It therefore suggests that student's feedback, self report and reflective journal/diary are the most adopted and preferred kinds of reflective teaching practices.

Research Question 2

What is the extent of effectiveness of the identified teaching practices on learning outcome?

Table 2: Extent of Effectiveness of Reflective Teaching Practices on Learning Outcome

S/N	Statement	\bar{X}	SD	Remark
1	A written account of experience after each lesson (reflective journal/diary).	3.60	0.52	VHE
2	Self report (self evaluation and self examination)	3.80	0.42	VHE
3	Peer observation/evaluation	2.05	1.00	LE
4	Collaborative learning	2.95	0.55	HE
5	Recording lessons via audio	2.65	0.98	HE
6	Recording lessons via video	3.00	0.50	HE
7	Students feedback (students evaluation)	3.90	0.33	VHE
8	Action research	2.70	0.50	HE

Source: *Field Survey 2019* VHE -Very High Extent, HE - High Extent, LE - Low Extent

Result on the extents of effectiveness of the various reflective teaching practices on learning outcome followed the same trend as seen in table 2. Students feedback ranked highest in mean rating, followed by self report and reflective journal/diary (3.90, 3.80 and 3.60) respectively. While recording of lesson via video, collaborative learning, action research and audio recording of lesson had relative lower mean value of (3.00, 2.95, 2.70 and 2.65) respectively. Peer observation/evaluation also had the least mean value (2.05). Hence it is not effective on learning outcome, compared to other variables.

Research Question 3

What are the strategies for enhancing reflective teaching practices in the study area.

Table 3: Strategies for Enhancing Reflective Teaching Practices in the Study Area

S/N	Statement	\bar{X}	SD	Remark
1.	Teachers should analyze their thought and observations.	3.80	0.40	Agreed
2.	Teachers should analyze the thought and observations of their students.	3.90	0.30	Agreed
3.	Teachers should make changes where necessary	3.55	0.55	Agreed
4.	Teachers should appraise a lesson whether it went well or not	3.05	0.50	Agreed
5.	Teachers should reflect on why a lesson was successful or not	3.20	0.62	Agreed
6.	Teachers should reflect on why students did not understand a lesson he introduced and why it may have been unclear	3.10	0.50	Agreed
7.	Teachers should reflect on why students misbehave, what caused it and when they misbehave.	2.80	0.94	Agreed
8.	Teachers should reflect on how effective their teaching was	3.35	0.50	Agreed
9.	Teachers should reflect on how students respond to their teaching.	3.50	0.63	Agreed
10.	Teachers should reflect on how to make their teaching better.	3.60	0.41	Agreed
11.	Teachers should ask students for feedback.	3.80	0.30	Agreed
12.	Teachers should look for what is working	2.90	0.50	Agreed
13.	Teachers should be honest, avoid defense mechanism	2.60	0.95	Agreed
14.	Teachers should record their teaching (audio and video)	3.00	0.80	Agreed
15.	Share video with professional learning network (collaborative learning)	3.65	0.40	Agreed
16.	A teacher should invite a colleague to observe his class and not to evaluate the lesson note.	2.80	1.00	Agreed
17.	A teacher should ask himself daily “How did it go”?	3.50	0.55	Agreed
18.	A teacher should diversify his metrics	3.00	0.50	Agreed
19.	A teacher should surround himself with enthusiasm	3.55	0.60	Agreed
20.	A teacher should keep a journal.	3.80	0.30	Agreed

Source: Field Survey 2019

Result on the strategies for enhancing reflective teaching practices in the study area as indicated in table 3 revealed that all the variables had mean values higher than the criterion mean value of 2.50. It thus suggests that all the strategies if adopted and implemented will enhance reflective teaching practices and also have a positive impact on learning outcome.

Kinds of Reflective Teaching Practices

Results in Table 1 showed that a reflective journal/diary and self report (self examination and self evaluation), are some of the preferred reflective teaching practices for professional development of teacher. This agrees with the assertion of Ur (1999) and Killion *et al.*, (1991) who observe that the most important basis for professional progress is simply the teachers own reflection on daily classroom events. Similarly, Husu *et al.*, (2008) also reported that reflection is a process of self-examination and self evaluation that teachers should engage in order to improve their professional practices.

Other reflective teaching practices are collaborative learning, peer observation/evaluation, recording of lessons, students feed back and action research. Several authors agree that reflection needs to happen in community in interaction with others. (e.g Benammar, 2004, Leijen *et al.*, 2012, Brookfield 1995). This study agrees with their observation.

Video or audio recordings of lessons can provide very useful information for reflection. Through listening and watching their own or other peer members audio and video recording, teachers can develop their awareness of teaching. A classroom video can vividly picture the whole process of teaching. It can trigger teachers reflective thinking, reflect on their weakness and help them get some inspiration and ideas for their teaching improvement. A teacher can ask their students what goes on in the classroom. This can be done with simple questionnaire. A teacher may do many things in class but may not be aware of many things happening in the class which he may not normally see. The students opinions and perceptions can add a different and valuable perspective. This observation confirms the findings of Priya *et al.*, (2017). Action research is also a kind of reflective practices. It helps teachers to become aware of what Is happening in the classroom by identifying common problems and hypothesizing about possible cause and solution and attempting to apply an action plan (Priya *et al.*, 2017).

The Extent of Effectiveness of Reflective Reaching Practices on Learning Outcome

Evidence has shown that self report (self evaluation and self examination) students feed back (student's evaluation) and reflective journal/diary are more effective reflective teaching practices to a very high extent as seen in Table 2.

This is not unexpected because, to engage in reflection required the teacher participates actively by keeping a daily record of events in the classroom after each lesson such as students behaviour, time management etc. that will enable them improve on their area of weakness strategies on new and better approaches to solve problems and also diversify their metrics. This confirms the assertion of Schon (1993). Students feedback draws the teacher's attention to areas they may have taken for granted.

Collaborative learning, recording lessons and action research were effective to a high extent, which suggests that collaboration with peers increase the probability that teachers will be successfully reflective and more confident in their professional development. While discussing their experience with their peers, they can describe their own experience and check, reframe and broaden their own theories of practice.

Recording lessons can be audio or video. Audio recording is necessary considering aspects of teacher talk. Video recording on the other hand shows aspects of teachers own behaviour. Exploring these measures enhances a better learning outcome, hence it was effective to a high extent. Action research entails solving a problem that has being identified in the classroom. It is expected that the teacher could find a significant change in the behaviour of the students when action research is adopted. That explains why action research was highly effective. This also confirms the findings of (Priya *et al.*, 2017). Peer observation/evaluation was less effective. This could be attributed to the fact that teachers may be critical or defensive to their peer's evaluation. However, for peer's observation to be effective or fruitful, the observers function should be limited to that of gathering information. The observer should not be involved in evaluating a teacher's lesson. Findings on peers observation negates the assertion of Priya *et al.*, (2017) who found out that peers observation was fruitful.

Strategies for Enhancing Reflective Teaching Practices

Generally, reflection uses the past to inform our judgment, reflect on our experiences and face new encounters with a broader repertoire of information, skills and techniques (Killion *et al.*, 1991). When you reflect on what has occurred and consequently change your action you will hopefully experience a different outcome. This theory informed the decision to adopt strategies to enhance reflective teaching practices. The findings from this study revealed that the strategies adopted will enhance good learning outcome as indicated in Table 3.

IV. Conclusion And Recommendations

Based on the findings, it was deduced that the concept of reflection into teacher enrichment programs, prepares teachers for a lifetime of reflecting on best practices that impacts learners achievement. Teachers can deal with the needs and different issues of the learners and demand of time if they reflect on their daily teaching learning activities for their professional growth.

It is therefore recommended that;

1. Teachers should incorporate reflective teaching practices in their method of teaching.
2. Teachers should adopt strategies that will enhance reflective teaching practices.
3. Training and retraining of teachers on reflective teaching practices should be encouraged.

References

- [1]. Abell, S. K., Bryan, L. A., & Anderson, M. A. (1998). Investigating Pre-service Elementary Science Teacher. Reflective Thinking using Integrated Media Case-Based Instruction in Elementary Science Teacher Preparation. *Science Education*, 82(4), 491-510.
- [2]. Akbari, R., (2007). Reflection on Reflection: A Critical Appraisal of Reflective Practice in L2. *Teacher Education*. 35(2), 192-207.
- [3]. Akerson, V. L., Abd El-Khalick, F. & Lederman, N. G. (2000). Influence of a Reflective Explicit Activity Based Approach on Elementary Teachers Conceptions of Nature of Science. *Journal of Research in Science Teaching*, 37(4), 295-317.
- [4]. Benammar, K. (2004). Conscious Action through Conscious Thinking – Reflection Tools in Experiential Learning. *Public Seminar*. Amsterdam: Amsterdam University Press.
- [5]. Brookfield, S. (1995). *Becoming a Critically Reflective Teacher*. Jossey-Bass: San Francisco.
- [6]. Calderhead, J. (1989). Reflection Teaching and Teacher Education. *Teaching and Teacher Education*, 5(1), 43-51.
- [7]. Gay, G. & Kirkland K. (2003). Developing Cultural Critical Consciousness and Self-Reflection in Pre-service Teacher Education. *Theory into Practice*, 42(3), 181-187.
- [8]. Griffiths, V. (2000). The Reflection Dimension in Teacher Education. *International Journal of Education Research*, 33(5), 539-555.
- [9]. Han. (1995). Issues in Education: Reflection is Essential in Teacher Education. *Childhood Education*, 71, 228-230.
- [10]. Husu, J. Toom, A. & Patrikainenm S. (2008). Guided Reflection as a means to Demonstrate and Develop Students Teachers Reflective Competencies. *Reflective Practice: International and Multidisciplinary Perspectives*, 9(1), 37-51.
- [11]. Jacobs, M., Vakalisa, N.C.G. & Gawe, N. (2011). *Teaching-Learning Dynamics*, Cape Town: Pearson.
- [12]. Jasper, M. A. (2003). Nurses Perceptions of the Value of Written Reflection. *Nurse Education Today*, 19(6), 452-463.
- [13]. Killen, R. (2007). *Teaching Strategies for Outcomes-Based Education*. Cape Town: Juta.

- [14]. Killion, J., Joellen, P., Todnem, & Guy, R. (1991). A Process for Personal Theory *Building Educational Leadership*, 48(6), 14-16.
- [15]. Leijen, A., Valtna, K., Leijen, D.A.J., & Pedaste, M. (2012). How to Determine the Quality of Students Reflections? *Studies in Higher Education*, 37(2), 203-217.
- [16]. Lieberman, A. & Miller, L. (2000). Teaching and Teacher Development: A New Synthesis for a New Century. In *Education in a New Era*, Brandt, R. (ed), 47-66.
- [17]. Loughran, J. J. (2002). Effective Reflective Practice: In Search of Meaning in Learning about Teaching. *Journal of Teacher Education*, 53(1), 33-43.
- [18]. Priya, Matthew, Prasanth Matthew, Prince Peechattu, (2017). Reflective Practices: A Means to Teacher Development. *Asian Pacific Journal of Contemporary Education and Communication Technology*, 3(1), 126-130.
- [19]. Schon, D. (1993). *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books.
- [20]. Ur, P. (1999). *A Course in Language Teaching: Practice and Theory*. Cambridge: CUP.
- [21]. Yang, S.H. (2009). Using Blogs to Enhance Critical Reflection and Community of Practice. *Educational Technology and Society*, 12(2), 11-21.

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