

CRITICAL APPRAISAL AND EVALUATION OF TEACHING AND LEARNING  
EFFECTS IN TECHNICAL COLLEGES IN RIVERS STATE

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**Abstract**

This study focused on critical appraisal and evaluation of teaching and learning effects in technical colleges in Rivers State to ensure that training given at this level of education is both qualitative and effective. A descriptive survey design was adopted. Three research questions and three research hypothesis were formulated to guide the study. The study population consists of all the one hundred and thirty-five (135) technical teachers of the four government technical colleges in Rivers State. The study sample comprised sixty (60) randomly selected technical teachers (forty males and twenty females) from the population. Data collections were by a 22-item structured questionnaires and were analyzed with frequency, percentage and mean statistics. The study found among other things, that teachers in technical colleges in Rivers State normally evaluate their students but do not adopt the use of all the methods of evaluation; instructional facilities in all the technical colleges are not adequate for instructional process; evaluation outcome of students performance is not adequately used for guidance and counseling purpose. Based on the findings, appropriate recommendations were put forward by the researchers.

Research findings over the years have revealed the importance of technical education as the basic tool for industrialization and national development. It is also recognized to play a vital role in providing individuals with trades and skills for securing gainful employment (Agwi, 2014). The implication here is that for a nation to take her rightful place technologically among the developing nations, she must focus on technical education (Olaitan, 1998, Akaninwor 2012, Nwanoruo 2011). The Federal Republic of Nigeria (2004) further corroborated this fact when it added that technical education is the aspect of education which leads to the acquisition of practical, psycho productive and applied skills as well as basic scientific knowledge. This leads to the suggestion that teaching and learning in technical education should be done in more practical ways right from the pre-vocational level. This is an advantage in the natural curiosity of children leading to their enthusiasm for learning. The quality of teaching and learning cause some of them to loose interest in technical education subjects at school leading to poor enrolment in their area.

In view of the great importance accorded to the study of technical education, series of strategies need to be taken to improve the quality of technical education. One of these strategies according to

Okwelle (2013) and Agwi (2012), include evaluation and assessment of students academic performance. Education programme such as technical education should be concerned with the process which deals with deliberate change in the behaviour of a person through the acquisition of knowledge, psycho productive skills, attitude, interest and appreciation. Okwelle (2013) echoed that in determining the extent to which such expected outcomes and changes in the learner's behavior have been realized, evaluation of the learners becomes necessary. Evaluation according to Adagwu (2012) and Jonah-Etell (2014), is a procedure for determining the extent or level of achievement made in attaining the objectives of a programme, and providing feedback on the unachieved outcomes. Gbamaja (2013) added that evaluation is a process by which we find out how far the learning and teaching experiences and development are organized and are actually producing the desired result. According to Agwi (2010), evaluation of learning outcome is another good strategy that can improve interest in learning.

There are many reasons why teachers should evaluate a student's performance in technical education, for it is through this that the teacher can find where the student belongs, how the student progresses, his learning problems and overall growth. Ozobokeme and Oghorodi (2013) stressed that the effort and time spent in teaching and learning can only be justified when there is a commensurable positive learning out come on the part of the students which can only be determined by evaluating the academic performance of the students. To achieve a better evaluation process, the Federal Republic of Nigeria (2004) stated that educational assessment and evaluation shall be liberalized by being based in whole or in part on continuous assessment of the progress of the individual.

Evaluation of students' academic performance or achievement forms an essential link in the chain of control, enabling the modification of teaching programmes so as to attain objectives and to improve curriculum design and presentation. For teaching and learning effects in our technical colleges to be qualitative and efficient, quality must be ensured in the evaluation process.

To appraise, according to Onyeukwu (2013), means "to estimate the value of quality of a thing". In this case, we need to appraise teaching and learning effects in our technical colleges in order to bring out its value and quality to the society. Quality, on the other hand, is that distinguishing parameter that brings out or express the worth or goodness associated with a programme or activity. It follows therefore, that appraisal of teaching and learning effects means bringing out its worth, goodness, value and efficacy, bearing in mind its importance to all other level of teaching and learning activities.

### **Statement of the problem**

Technical education programme is to provide the graduates of technical education with necessary practical knowledge, psychomotor skills that will help them live useful life and become self-reliant, employers of labour without looking for white collar jobs in government offices and establishments. But a cursory look at most of the graduates from these four technical colleges showed that these graduates could not perform significantly across the state; hence the quality of teaching and learning of this important course raised some doubts and questions about the effects of teaching and learning such as:

1. Are there any competency-based training given to teaching and learning of technical education course?
2. What are the effects of this training on students quality after graduation?
3. What are the effects of instructional materials used in the teaching and learning?

All the above questions necessitated the researchers to carry out a critical appraisal and evaluation for teaching and learning in technical colleges in Rivers State and the country at large what could have caused their poor performance.

### **Purpose of the Study**

The main purpose of the study was critical appraisal and evaluation of teaching and learning effects in technical colleges in Rivers State, Nigeria. Specifically, the study intends to:

1. ascertain whether the instructional facilities in technical colleges in Rivers State are adequate for evaluation process;
2. ascertain whether teachers use the correct type of evaluation during teaching and learning period; and
3. ascertain whether the outcome of evaluation process are used to judge the adequacy of the amount of knowledge or skill possessed by students.

### **Research questions**

The study sought answers to the following research questions:

1. To what extent do the teachers in technical colleges in Rivers State uses the correct type of evaluation during teaching and learning period?
2. To what extent are the instructional facilities in these colleges adequate for evaluation?
3. To what extent are the outcome of evaluation process used to judge the adequacy of teaching and learning effects?

### **Hypotheses**

The following hypothesis were generated and tested at 0.05% level of significance.

- H0<sub>1</sub>:** There is no significant difference between the mean responses of male and female teachers on the extent the instructional facilities in technical colleges in Rivers State are adequate for evaluation.
- H0<sub>2</sub>:** There is no significant difference between the mean responses of male and female teachers on whether teachers use the correct type of evaluation during teaching and learning period.
- H0<sub>3</sub>:** There is no significant difference between the mean responses of male and female teachers on whether the outcome of evaluation process are used to judge the adequacy of the amount of knowledge or skill possessed by students in technical colleges in Rivers State.

### **Methodology**

A descriptive survey research design was adopted in this study aimed at finding out the responses of teachers about the use of the current methods of evaluation during teaching and learning period, and the use of the outcome of evaluation process in judging the adequacy of the amount of knowledge or skill possessed by students. The critical appraisal and evaluation of teaching and learning effects in these technical colleges was determined through a self-structured research instrument. The instrument were classified into three sections namely, the appraisal and evaluation of teaching and learning effects. Each section of the three areas was made up of six, six, ten items respectively. The instrument was based on the Likert type of scale. Items were constructed to elicit information from respondents on whether the instructional facilities in technical colleges in Rivers State are adequate for evaluation process; whether teachers use the correct type of evaluation during teaching and learning; and whether the outcome of evaluation process are used to judge the adequacy of the amount of knowledge or skill possessed by students. In all, the instrument was made up of twenty two (22) items.

The four points scale has four response categories as; Very High Extent (4), High Extent (3), Low Extent (2), Very Low Extent (1). The total scores on the appraisal and evaluation of teaching and learning effects in technical colleges was obtained by adding the index of the scale.

The research instrument was validated by two experts in science and technical education and three experts in department of measurement and evaluation, Rivers State University of Science and Technology, Oroworukwo, Port Harcourt. Pilot test was done to test the reliability of the research instrument. The reliability yielded 0.85 using the Pearson Product Moment Correlation Coefficient (r).

The target population of this study consists of one hundred and thirty-five technical education teachers of the four government owned technical colleges in Rivers State namely, Government Technical College, Tombia, Government Technical College, Ahoada, Government Technical College, Port Harcourt and Government Technical College, Ele-Ogu. The sampled sixty (60) technical education teachers (forty male and twenty female) of the institutions, were constituted by the purposive sampling technique. Stratified random sampling method was used to select technical education teachers from the technical colleges who participated as respondents in the study. The instrument was administered to the respondents by the researchers and the research assistants. Data collected was analyzed using the Statistical Package for Social Science (SPSS). Mean score were extracted and used to answer research questions and t-test analysis were used to answer research hypothesis at 0.05 level of significance. Items with mean value of 2.50 and above were considered adequate/agreed, while items with mean value of 2.49 below was considered inadequate/disagreed.

### Results

The following table shows the summary of the analysis of data in relation to each of the research question.

#### Research question 1

To what extent are the instructional facilities in technical colleges in Rivers State adequate for evaluation process?

**Table 1:** Teacher' response on the extent at which the instructional facilities in technical colleges in Rivers State are adequate for evaluation process.

| S/N | Items  | VHE<br>(4) | HE<br>(3) | LE<br>(2) | VLE<br>(1) | Total | Mean<br>X | Group<br>Mean | Decision |
|-----|--|------------|-----------|-----------|------------|-------|-----------|---------------|----------|
|     | Comment on the extent at which the instructional adequate. |            |           |           |            |       |           |               |          |
| 1.  | Adequately provided with enough tools                      | -          | -         | 5         | 55         | 65    | 1.08      |               |          |
| 2.  | Adequately provided with enough machine                    | -          | -         | 6         | 54         | 66    | 1.10      |               |          |
| 3.  | Adequately provided with enough expendables                | -          | 2         | 10        | 48         | 74    | 1.23      | 1.39          | NA       |
| 4.  | Adequately provided with enough equipments                 | -          | 4         | 12        | 44         | 78    | 1.30      |               |          |
| 5.  | Adequately provided with enough assessment materials       | -          | 15        | 19        | 26         | 109   | 1.82      |               |          |
| 6.  | Adequately supplied with                                   |            |           |           |            |       |           |               |          |

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|                |   |   |    |    |     |      |
|----------------|---|---|----|----|-----|------|
| electric power | 2 | 5 | 25 | 28 | 101 | 1.68 |
|----------------|---|---|----|----|-----|------|

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Cut-off = 2.50, N= 60

Table 2 shows the rating of the respondents on the extent at which the instructional facilities in technical colleges in Rivers State are adequate for evaluation process during teaching and learning period. It revealed that the group mean (x) of 1.39 is less than the acceptable mean of 2.50, and consequently the instructional facilities in technical colleges in Rivers State are not adequate for evaluation process during teaching and learning period.

**Research question 2**

To what extent do the teachers in technical colleges in Rivers State use the correct type of evaluation during teaching and learning period?

The data generated to answer this research question are presented in table 2.

**Table 2:** Teachers’ response on the extent the correct type of evaluation are used during teaching and learning period.

| S/N  | Items                                       | VHE<br>(4) | HE<br>(3) | LE<br>(2) | VLE<br>(1) | Total | Mean<br>X | Group<br>Mean | Decision |
|--|---|------------|-----------|-----------|------------|-------|-----------|---------------|----------|
| <b>Comment on the extent teachers use the correct type of evaluation</b> |   |            |           |           |            |       |           |               |          |
| 7.   | Use of formative evaluation                 | 5          | 15        | 30        | 10         | 135   | 2.25      |               |          |
| 8.   | Use of summative evaluation                 | 6          | 20        | 28        | 6          | 144   | 2.43      |               |          |
| 9.   | Use of process evaluation                   | 10         | 23        | 18        | 9          | 154   | 2.57      | 2.39          | NA       |
| 10.  | Adequately use of product evaluation        | 11         | 19        | 28        | 2          | 159   | 2.65      |               |          |
| 11.  | Adequately use of standard achievement test | 2          | 10        | 15        | 38         | 10    | 1.68      |               |          |
| 12.  | Use of teacher made test                    | 14         | 20        | 22        | 2          | 166   | 2.77      |               |          |

Cut – off = 2.50, N= 60

Table 2 shows the rating of the respondents on the extent the correct type of evaluation are used during teaching and learning period by teachers. It revealed that the group mean (X) of 2.39 is less than the acceptable mean of 2.50, and consequently, all the correct types of evaluation technique are not adequately being used during teaching and learning period in technical colleges in Rivers State.

**Research question 3**

To what extent is the outcome of evaluation process used to judge the adequacy of teaching and learning effects in technical colleges in Rivers State?

The data generated to answer this research question are presented in tale 4.

**Table3:** Teachers response on the extent at which the outcome of evaluation process is used to judge the adequacy of teaching and learning effects.

| S/N | Items   | VHE<br>(4) | HE<br>(3) | LE<br>(2) | VLE<br>(1) | Total | Mean<br>X | Group<br>Mean | Decision |
|-----|---|------------|-----------|-----------|------------|-------|-----------|---------------|----------|
|     | <b>Comment on the extent to which the outcome of evaluation process is adequately used.</b> |            |           |           |            |       |           |               |          |
| 13. | Judge of students learning problems by evaluation   | 10         | 20        | 25        | 15         | 165   | 2.75      |               |          |
| 14. | Judging of students to find where they belong   | 5          | 21        | 30        | 4          | 147   | 2.45      |               |          |
| 15. | Judging of students to find how they progress.  | 15         | 25        | 10        | 10         | 165   | 2.75      |               |          |
| 16. | Judging of knowledge or skills possessed by students through evaluation                     | 30         | 15        | 10        | 5          | 190   | 3.17      |               |          |
| 17. | Promotion of students through evaluation outcome  | 20         | 22        | 16        | 2          | 180   | 3.00      |               |          |
| 18. | Informing parents about the progress of their children                                      | 10         | 12        | 20        | 18         | 134   | 2.23      |               |          |
| 19. | Motivating students using outcome of evaluation process                                     | 5          | 15        | 18        | 22         | 123   | 2.05      |               |          |
| 20. | Assessing the effective of teaching strategy using evaluation outcome.                      | 6          | 10        | 20        | 24         | 118   | 1.97      | 2.44          | NA       |
| 21. | Using of evaluation outcome for guidance and counseling                                     | 8          | 9         | 10        | 33         | 112   | 1.97      |               |          |
| 22. | Forwarding of evaluation outcome to officials of ministry of education                      | 7          | 15        | 20        | 18         | 131   | 2.18      |               |          |

Cut-off =2.50, N= 60

Table 3 shows the rating of the respondents on the extent at which the out come of evaluation process is used to judge the adequacy of teaching and learning effects in technical colleges in Rivers State. It revealed that the group mean (X) of 2.44 is less than the acceptable mean of 2.50, and consequently, the outcome of evaluation process are not adequately used to judge the adequacy of teaching and learning in technical colleges in Rivers State.

### Hypothesis 1

There is no significant difference between the mean responses of male and female teachers to the extent in which instructional facilities in technical colleges in Rivers State are adequate for evaluation.

The result is presented in Table 4 below.

**Table 4:** Independent t-test analysis of mean responses of male and female teachers response on to what extent are the instructional facilities in technical colleges in Rivers State are adequate for evaluation.

| SEX                | N  | X     | SD   | DF | t    | Sig. | P    | Decision                    |
|--------------------|----|-------|------|----|------|------|------|-----------------------------|
| <b>Males (1)</b>   | 40 | 10.53 | 2.74 |    |      |      |      |                             |
|                    |    |       |      | 58 | 0.75 | 0.46 | 0.05 | H0 <sub>1</sub><br>Accepted |
| <b>Females (2)</b> | 20 | 11.05 | 2.11 |    |      |      |      |                             |

(Field Study, 2015)

Note:  $P < 0.05$ , there is a significant difference.

Table 4 above indicates the mean and standard deviation of males (10.53 & 2.74) and females (11.05 & 2.11). The t-test result gave a t-value of -0.75, df(58) with significant value of 0.46 not significant at 2-tailed. Since the significant value of 0.46 for 2-tailed is greater than the chosen alpha of 0.05, the null hypothesis of no significant difference between the male and female teachers mean responses to what extent are the instructional facilities in technical colleges in Rivers State are adequate is therefore, accepted.

### Hypothesis 2

There is no significant difference between the mean responses of male and female teachers on whether teacher uses the correct type of evaluation during teaching and learning period.

The result is presented in Table 4 below.

**Table 5:** Independent t-test analysis of mean responses of male and female teachers on whether teachers use the correct type of evaluation during teaching and learning period.

| <i>SEX</i>         | <i>N</i> | <i>X</i> | <i>SD</i> | <i>DF</i> | <i>t</i> | <i>Sig.</i> | <i>P</i> | <i>Decision</i>             |
|--------------------|----------|----------|-----------|-----------|----------|-------------|----------|-----------------------------|
| <b>Males (1)</b>   | 40       | 10.95    | 2.21      | 58        | -0.13    | 0.22        | 0.05     | H0 <sub>2</sub><br>Accepted |
| <b>Females (2)</b> | 20       | 11.80    | 2.97      |           |          |             |          |                             |

### (Field Study, 2015)

Note:  $P < 0.05$ , there is a significant difference.

Table 5 above indicates the mean and standard deviation of males (10.95 & 2.21) and females (2.21 & 2.97). The t-test result gave a t-value of -0.13, df (58) with significant value of 0.22 not significant at 2-tailed. Since the significant value of 0.22 for 2-tailed is greater than the chosen alpha of 0.05, the null hypothesis of no significant difference between the male and female teachers mean response on whether teachers use the current type of evaluation during teaching and learning process in technical colleges is therefore accepted.

### Hypothesis 3

There is no significant difference between the mean responses of male and female teachers on whether the outcome of evaluation process are used to judge the adequacy of the amount of knowledge or skill possessed by students.

The result is presented in Table 6 below.

**Table 6:** Independent t-test analysis of mean responses of male and female teachers' responses on whether the outcome of evaluation process are used to judge the adequacy of the amount of knowledge or skill possessed by students.

| <i>SEX</i>         | <i>N</i> | <i>X</i> | <i>SD</i> | <i>DF</i> | <i>t</i> | <i>Sig.</i> | <i>P</i> | <i>Decision</i>             |
|--------------------|----------|----------|-----------|-----------|----------|-------------|----------|-----------------------------|
| <b>Males (1)</b>   | 40       | 22.95    | 4.67      | 58        | 1.70     | 0.94        | 0.05     | H0 <sub>3</sub><br>Accepted |
| <b>Females (2)</b> | 20       | 20.70    | 5.11      |           |          |             |          |                             |

(Field Study, 2015).

Note:  $P < 0.05$ , there is a significant difference

Table 6 above indicates the mean and standard deviation of males (22.95 & 4.67) and females (20.70 & 5.11). The t-test result gave a t-value of 1.70, df (58) with significant value of 0.94 not significant at 2-tailed. Since the significant value of 0.94 for 2-tailed is greater than the chosen alpha of 0.05, the null hypothesis of no significant difference between the male and female teachers mean responses on whether the outcome of evaluation process are used to judge the adequacy of the amount of knowledge or skill possessed by students in technical colleges in Rivers State are therefore accepted.

### **Summary of major findings**

The following were the findings of the study:

1. Teachers in technical colleges in Rivers State normally evaluate their students performances but do not use all the methods of evaluation to evaluate students during learning and after teaching period.
2. Instructional facilities in all the four government technical colleges are not adequate for evaluation process.
3. The evaluation outcome is not adequately used to judge the adequacy of teaching and learning.
4. Evaluation outcome of students' performance is not adequately used for guidance and counseling purpose in terms of students' choice of career.

### **Discussion of findings**

The findings of this study revealed that teachers in Technical Colleges in Rivers State normally evaluate their students during and after teaching and learning period but do not make use of all the correct methods of evaluation to evaluate their students during learning and after teaching period. They rather adopt the use of evaluation process that will be less time taken and easy to assess. This problem should be corrected, since evaluation is the only way through which a teacher and other stake holders in education can determine the extent to which expected change in the students' behaviour have been realized (Okwelle, 2013).

The implication of these findings is worrisome because without the use of the correct methods of evaluation process, the teacher may not be able to find where the learner belongs, how the learner progresses, his learning problems and his overall growth. It will also be difficult for teachers and curriculum developers to find out how far the learning experiences are developed and organized and actually producing the desired result. For it is only through this means that new innovations can be made for improvement and quality attainment.

In terms of the instructional facilities in all the technical colleges in Rivers State, it is sad to observe from the findings of this study that they are not adequate for instructional process. These findings contradict the opinions of Ozobokeme and Oghorodi (2013), who believed that the effort and time spent on teaching and learning can only be justified when there is a commensurable positive learning outcome on the part of the students which can only be determined by the use of appropriate instructional facilities during the period of teaching and learning. A situation whereby the available instructional facilities in the workshop are the types that are out-dated, will cause the teacher to spend more time in talking instead of going ahead to demonstrate the lesson to students. The consequence of this ugly situation to the students will be loss of interest, and under this situation no commensurable positive learning outcome on the part of students will be achieved.

The findings of this study also revealed that the outcome of evaluation results are not adequately used to judge the adequacy of teaching and learning effects. A situation where this type of problem exists, the knowledge or skill possessed by the learner will not be properly determined (Jonah-Etell, 2014). The implication of these findings is worrisome as the learners will not be properly guided and counseled in terms of their choice of career unless proper steps are urgently taken to address this ugly situation.



Evaluation records are meant to be properly kept for many reasons, such as, guiding and counseling students, informing parents about the progress of their children, motivation of learners, modification of teaching and learning process, etc. Adequate use of these records should be observed by school authorities since the records are obtained from assessment and evaluation of students based on whole or in part on continuous assessment of the progress of the individual (Federal Republic of Nigeria, 2004).

An aspect of the result of this study reveals no significant difference between the responses of male and female teachers to the extent the institutional facilities in technical colleges in Rivers State are adequate for evaluation. Again, the result of this study shows no significant difference between the responses of male and female teachers on whether teachers uses the correct type of evaluation during teaching and learning period. Finally, the result of this study show no significant difference between the responses of male and female teachers on whether the outcome of evaluation process are used to judge the adequacy of the amount of knowledge or skill possessed by students in technical colleges in Rivers State.

### **Conclusion**

The study revealed the fundamental truths in evaluation of teaching and learning effects in technical colleges in Rivers State. In order to guarantee quality in evaluation for our present and generation yet unborn, the short-comings found at this level of education system must be addressed urgently. Teachers must ensure that they are committed to their responsibility particularly as using the correct methods of evaluation to evaluate learners performance during teaching and learning period. Government on their own should as matter of urgency make adequate provisions of new instructional facilities to all the technical colleges for effective instructional process.

### **Recommendations**

Following the result of the study, the researchers make the following recommendations:

- Appropriate methods of evaluation should be used by teachers' to evaluate learners performance.
- Training in technical colleges is aimed at providing skills and knowledge to the learners, adequate use of product evaluation should be adopted regularly to achieve this aim.
- Government at both state and federal levels should, as a matter of urgency, make adequate provision of instructional facilities to all the technical colleges.
- Career guidance and counselling of students on their choice of career should be based on records obtained from evaluation of students' performance previously.
- Records of evaluation outcome should be used adequately to inform parents about the progress of their children in the school.
- To effectively monitor and enforce evaluation process in schools, officials of the school Board and Ministry of Education should ensure that schools always submit to their office records of students' performances obtained from evaluation process.
- Training programme in form of workshops should always be organized for teachers as to up-date their knowledge on new innovations about evaluation process.

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