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# **CORRELATION OF TEACHER-TRAINEE GRADES IN BIOLOGY METHODOLOGY COURSES AND TEACHING PRACTICE**

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## **INTRODUCTION**

One major thrust of the on-going reforms in the education sector of the economy is to reposition teacher education for better service delivery to recipients of instructions in every rung of the academic ladder, so that in its quest for meaningful national development, the Nigerian state can remain focused and keep pace with the dynamic global society.

The validity of any educational system is dependent upon the quality of the teaching and the availability of competent teachers (Razak 1972:9) in Aguokogbuo (2003:23). The latter further cited that well-trained and conscientious teachers would be required in order to achieve the philosophy and objectives of national education. As the National Certificate in Education (NCE) is the minimum requisite qualification for entry into the teaching profession, it is expedient that potential teachers should be professionally groomed to be proficient in the art of lesson preparation and presentation, (Ukpene, 2004) and exhibit capacities to design an educational system that will take into account changes in the world in the relationship of nations to one another (Iyke and Ena, 2003).

Gone are the days when the teaching profession was desired for lack of viable job opportunities. With the professionalisation of teaching the practitioners in the field of education are prepared through exposure to the various tenets of human learning, behavioural changes, content interpretation and implementation, as well as adaptations to variables in the learning environment.

Colleges of Education in Nigeria are empowered by their various enabling Decrees to train and produce teachers that would teach in primary schools as well as in the Junior Secondary School levels respectively. The teaching field is replete with methodologies that could be used to instruct learners so that desirable teaching skills might be inculcated. As teachers are the custodians of the implemented curriculum (Iji, 2001), teacher-trainees in Colleges of Education undergo special methodology courses across subject disciplines and in education so that they can attain an appreciable level of competences in their various teaching subjects and in the methodologies for teaching them. Competences in the courses are verified through periodic formative evaluations and micro teaching to which the trainees are subjected before the end of the course programme (Ihiegbullem, 1997). The micro teaching simulates and prepares them for the ultimate teaching practice exercise.

### ***Teaching Practice***

Teaching practice has been operationally defined by Yee, (1967) as cited in Imogie, (1990), as a Prolonged period of laboratory experience in an actual classroom situation during which the student takes increasing responsibility for his preparation as a teacher under the direction of a college supervisor representing his teacher-education centre and a co-operating teacher who is responsible for the classroom situation.

The teaching practice exercise is a well thought-out programme, carefully packaged to achieve set objectives that have been succinctly summarized by Cope et. al. (1977) in Nweke (1990) as follows:

- Provision of opportunities to put theory into practice.
- Give practical experience, opportunity and facilities for self confidence and expertise.
- Provision of ability to organise, control and manage classroom with due disciplinary measures, and
- Finally to develop an integrational and mutual sense of co-operation as well as interchange of ideas and attitudes (Nweke, 1990:20)

From the above, it can be deduced that the delivery of instruction in college biology course programmes is premised on the acquisition of competences that would predispose teacher- trainees to teaching without leaving attendant gaps between theory and practice. The teaching practice exercise is therefore believed to be packaged on the threshold of making student-teachers to become purposefully effective and professionally productive in their chosen fields. Expected competences of the prospective teaching practice student among others, should include ability to plan and meaningfully deliver guided learning experiences to learners; organise learning activities and evaluation techniques that would elicit desirable behavioural outcomes from the learners.

#### **Statement Of Problems**

Two course programmes namely BIO 123 (Biology Method I) and BIO 215 (Biology Method II) are taught to teacher-trainees (at 100 and 200 levels respectively) to equip them with the requisite competences for effective teaching in primary schools as well as in the Junior Secondary Schools. Prior to certification, the trainees are subjected to a 12-week, compulsory 6 unit teaching practice exercise. Usually, they are posted to private or public schools where they practice under the aegis of a head teacher or a classroom teacher. In addition, they are expectedly supervised and graded by college-based supervisors, all in a bid to maintain quality and guide the student-teacher towards the attainment of the desired objectives of the programme. Observations have shown that sometimes supervision is not thoroughly done. Some internal supervisors (school-based supervisors) see the presence of student-teachers as an opportunity to galvanise themselves into gossip groups, to stay away from classes or to go hawking articles from one place to another. On the other hand, the college-based supervisor who is poorly mobilised to do a thorough supervision craves to cover a large number of students at a stretch. Odor (1990) noted that some students may not be supervised due to some reasons. He asserted that such students are usually subjected to micro-teaching in the college as a substitute, which regrettably may not be as realistic as when the supervision is done in the secondary school setting. Surprisingly, all lapses in the supervision process are covered up with the inconsistent award of high marks. Records abound with high grades earned in teaching practice, as against low grades or outright failures obtained in the methodology courses which ought to prepare them for the teaching practice exercise. This study is therefore motivated to:

- i. Collate grades obtained by some biology students in BIO 123 and BIO 215, as well as in their teaching practice exercise.
- ii. Correlate the grades in (i) above using the Pearson Product Moment Correlation Coefficient.

#### **Research Question**

The following research question was investigated in the study.

- i. Does the performance of students on teaching practice depend on competences acquired from methodology courses (BIO 123 and BIO 215 respectively) in biology?

**Hypothesis**

The following null hypothesis was tested in the study at the 0.05 level of significance:

- i.  $H_0$  Students' performances during teaching practice is significantly independent of competences/teaching skills acquired from methodology courses in biology.

**Methodology**

The study is a correlation research intended to generate data on the interrelationship between students' performance in teaching practice and the biology method courses which prepare them for the former. Using this design, only one observation involving three variables was made in the study and the information generated was used to test the hypothesis.

**Population**

The population of the study consist of all the registered biology students of the College of Education, Agbor who participated in the teaching practice exercise of the 2004/2005 academic session.

**Sample**

The sample of the study consisted of twenty-five biology students of the College of Education, Agbor, who participated in the 2004/2005 teaching practice exercise. The sample was drawn by means of a table of three-digit random numbers as described by Nwana (1982:65)

**Data Collection**

Secondary data was used in the study. The mean scores of the twenty-five students each in BIO 213 and BIO 215 were first determined. These were later correlated with their teaching practice mean scores using the Pearson Product Moment Correlation Coefficient, and tested at P= 0.05 level of significance.

**Results**

S/N	BIO 123 Raw scores	BIO 215 Raw scores	Mean Methodology Score (x)	Mean T.P Scores (y)	$x - \bar{x}$	$y - \bar{y}$	$(x - \bar{x})(y - \bar{y})$	$(x - \bar{x})^2$	$(y - \bar{y})^2$
1	20	20	20	62	-16.66	0.56	-9.33	277.56	0.31
2	68	43	55.5	56	18.84	-5.44	-102.49	354.94	29.59
3	51	22	36.5	65	-0.16	3.56	-0.57	0.03	12.67
4	67	50	58.5	72	21.84	10.56	230.53	476.99	111.51
5	47	41	44.0	46	7.34	-15.55	-113.33	53.88	238.39
6	51	22	36.5	60	-0.16	-1.44	0.23	0.03	0.19
7	55	40	47.5	61	10.84	-0.44	-4.77	117.5	2.07
8	52	24	38	60	1.34	-1.44	-1.93	1.80	0.19
9	43	26	34.5	62	-2.16	0.56	-1.21	4.67	0.31
10	51	40	45.5	64	8.84	2.56	22.63	78.15	6.55
11	72	24	48	67	11.34	5.56	63.05	128.59	30.91
12	40	14	27	57	-9.66	-4.44	42.89	93.31	19.71
13	43	13	30	70	-6.66	8.56	-57.01	44.36	74.27
14	00	13	6.5	56	-30.16	-5.44	164.07	909.63	29.59
15	50	28	39	62	2.34	0.56	1.31	5.48	0.31
16	26	41	33.5	61	-3.16	0.44	1.39	9.98	0.19
17	56	22	39	66	2.34	4.56	10.67	5.48	20.79
18	63	40	51.5	52	14.84	-9.44	-140.09	220.22	89.11
19	44	22	33	70	-3.66	8.56	-31.33	13.40	73.27

Results Table continues

20	44	40	42	64	5.34	2.56	13.67	28.52	6.55
22	41	16	28.5	60	-8.16	-1.14	11.75	66.59	0.19
23	16	10	13	64	-23.66	2.56	-60.57	559.80	6.55
24	47	20	33.5	60	-3.16	-1.44	4.55	9.99	2.07
25	31	13	22	55	-14.66	-6.44	94.41	214.92	41.47

N=25

$t_{cal} = 0.10 < r_{tab,0.95} = 0.423$

**Table I: Correlation of methodology mean score and T.P. Scores COE Agbor, 2004/2005**

Since the test statistics  $r = 0.10$  is less than the critical value of  $r = 0.423$  for twenty four degrees of freedom, we accept  $H_0$  at the 0.05 level of significance. It means that students' performances during teaching practice is significantly independent of competences/teaching skills acquired from methodology courses in biology.

### Discussion

The test statistics shows a sparingly positive relationship of 0.10 between the mean scores on methodology courses and mean scores from teaching practice. This is a pointer that skills/drills purportedly given to students preparatory for the teaching practice exercise are seldom put into use. This is buttressed by the fact that a face-validation of the mean scores in BIO 123 and BIO 215 reveals low marks in some cases and outright failures in most instances. This is opposed to the teaching practice mean scores where no failure is recorded with the least ranging from 50.

However, if a concrete view premised on the objectives of teaching methodology courses as preparatory for teaching practice is considered, it is possible therefore to suppose that the teaching practice scores are not reliable or were biased (Awanbor, 1990). Another angle to it might be that supervisors or assessors are making use of an extremely narrow range of assessment instrument that superficially covers the necessary competences needed of practicing teachers. Kpangban (1990), had noted that college supervisors may not have received proper training in supervision skills. Consequently, supervision which becomes unfocused and even threatening bothers more on assessment/evaluation rather than offering assistance to the teacher-trainees to grow in their acquisition of competent teaching skills. Hence, Morrison and McIntyre (1973), in Kpangban (1990), cited that teaching practice marks as currently awarded are not likely to be good predictors of student-teachers' teaching ability. This assertion was corroborated by Shipman (1966) who concluded that teaching practice marks do not seem to be a measure of true performance, do not influence or predict future success or failure but rather interfere with the main purpose of teaching practice.

### Conclusion

Only conscientious and well trained teachers would adequately fit into the structural reforms currently going on in education. This can be achieved when the basic knowledge in methodology courses as well as microteaching are internalized by the teacher-trainees. Emphasis on teaching practice should shift from the ultimate grades awarded to student-teachers and placed on how they might be guided to acquire competent teaching skills that would ultimately translate into the production of effective and professionally skilful teachers.

### Recommendations

Teaching practice assessment instrument should be standardized so that the same parameters are used to assess all the participants on the programme.

College-based supervisors should be educated through periodic workshops and in-house seminars on supervisory skills using simulation, interactive analysis and microteaching before being

posted out on teaching practice supervision. Emphasis should be shifted from final grades that might be obtained from it to how much guidance and correction that could be given by college supervisors (Kpangban, 1990).

Students' performances during the teaching practice exercises should be reviewed at the end of every exercise so that those found to be deficient in certain areas might be remedied through post teaching practice peer/micro teaching.

Finally, students who fail any of the prerequisites methodology courses should be culled from participating in teaching practice exercises.

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