



An Appraisal of Reflective Teaching Techniques and Teachers' Effectiveness in Tertiary Institutions in Cross River State

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ABSTRACT

The study is a descriptive and empirical "Appraisal of Reflective Teaching Technique and teacher effectiveness in Higher Institutions in Cross River State Nigeria". Specifically, the study examined the techniques of teachers' mind mapping, journaling, use of teaching inventories, video recording, teaching portfolio technique and departmental observation feedback as reflective teaching practices meant to enhance teacher effectiveness. To guide the study, six research questions and six null hypotheses were formulated at 0.05 level of significance. The justification for this study is to add to knowledge on the continued quest for best strategies and practices that would provide and encourage teachers with the spirit of enquiry and creativity towards improvement of teacher professionalism and quality education. More so, since available literature on reflective teaching techniques are not available to the researchers within the area of this study; the study fills a knowledge gap and contributes to literature in appraising the influence of reflective techniques on teacher effectiveness in Cross River State Nigeria.. A sample size of 620 teachers was selected as

respondents. Structured questionnaire was used to collect data from the respondents and data from responses were tallied, rated and analyzed using mean and mean deviation to answer the research questions. The mean score of 2.50 or above were regarded as accepted while any mean less than 2.50 were rejected. The hypotheses formulated were tested using the Pearson Product-Moment Correlation Coefficient (PPMCC) or the bi-variant correlation. Results from respondents on the questionnaire items were in affirmative that reflective teaching techniques to a great extent and in some cases to a very great extent lead to teacher effectiveness. To test this hypothesis, Pearson Product Moment Correlation analysis technique was applied on the data to correlate the sets of scores. The null hypotheses were rejected as the calculated r-values were found to be greater than the critical r-values probability level, and with higher degree of freedom. This result means that there is a significant relationship between the variables of reflective teaching techniques and teachers' effectiveness. Reflective teaching techniques are therefore, needed to be vigorously encouraged amongst lecturers in Higher education for teacher effectiveness.



KEY WORDS: Reflective Teaching; Teacher Effectiveness & Higher Institutions.

I. Introduction

Teachers, not schools, make the difference in student learning. It is on that premise that institutions and governments have continued to engage teachers at all levels for quality education. However, despite attempts at recruitment of teachers in quality and number, the quality of education has continued to nose-dive. The products of our institutions are unemployable as they graduate without requisite knowledge, skills and acceptable social values. There is then the urgent need for highly effective teachers in every classroom required to provide leadership in teaching and learning for students to acquire knowledge, skills and values beyond theory to confront the challenges of the computer and technology age.

Researchers have provided multiplicity of perspectives on what make teachers good. Some emphasize the characteristics of effective teachers; others study qualities, behaviours, attitudes, dispositions, personality traits, activities and strategies of teaching as the domains for teacher effectiveness. However, some schools of thought distinguish between the inputs, the processes and output factors of teacher effectiveness, while others define it from a value-added perspective. Nonetheless, there are deeply held personal and professional beliefs and values on who is a good teacher despite the elusiveness of conceptual definition. It is also theoretically possible to identify indicators for teacher effectiveness that are measurable though there is a dearth of research in many of these areas (Gordon, Kane & Staiger, 2016).

To inspire education through teaching is a complex highly skilled activity and teachers must exercise judgments in deciding how to act to support learning. Reflective teaching emphasizes the ethics of care and constructivist approach to teaching through creative problem solving (Ede, Anyanwu & Abushey, 2017). Reflective teaching is on-the-job teaching practice. Reflective practice can be an important tool in practice-based professional learning settings where people learn from their own professional experiences, rather than from formal learning or knowledge transfer. It is one of the most important sources of personal professional development and improvement. The process brings together theory and practice; as through reflection a person is able to see and label forms of thought and theory within the context of his or her work (Barry, 2017). A teacher who reflects throughout his practice looks back on past actions and events to

take conscious look at emotions, experiences, actions, and responses to use such information as knowledge base to reach a higher level of understanding. Reflective teaching approach produces students with reflective learning as a way to prepare students for the challenges of an ever-changing and technologically advanced world. Reflective teaching/learning have thus become increasingly relevant to educators as it is part of the process of how humans learn. The teacher, as a role model, is the most significant influence on a student developing reflective practice. Reflective practices enable educators to teach in a way that engages young people, challenges them and builds their desire to learn more. As some institutions of learning and university faculties are dedicated and committed to the production of teachers, it is pertinent to appraise the extent this all important technique for teacher development and professionalism is inculcated and applied in our tertiary institutions with particular reference to the tertiary institutions that produce teacher in Cross River State Nigeria.

Problem statement/Justification for the study

Nigeria as a matter of policy has made education an instrument par excellence for effecting national development. The policy has further stated inter-alia that all teachers in educational institutions shall be professionally trained to equip them for effective performance of their duties (FRN: 2014). Since no education system can rise above the quality of its teachers, professional development of teachers has to be of utmost priority.

In response for teachers' quality, stakeholders in the educational sector provide and support programmes and policies to ensure professional development of teachers. For instance every lecturer in higher institutions in Nigeria is privileged through the Federal Government Tertiary Education Fund (TETFUND) to access fund for further studies in the universities. Similarly, institutional research incentives, conferences, seminars and workshops are organized for teachers by the government and international development agencies to ensure teacher development and effectiveness.

However, these laudable efforts have not translated into effective learning through quality education. Students graduate in numbers in higher institutions without the necessary skills and competencies. The effectiveness of teachers cannot be justified without the learning goals of education being achieved. The search for the quality and effective teacher makes it obvious that intrinsic



motivational measures to make the teacher perform on the task of teaching and learning is critical. Reflective teaching is one of such intrinsic motivators for teacher effectiveness. Reflective teaching operates as an umbrella term denoting a variety of practices, including teaching inventories and observation protocols, self-assessments, and consideration of student evaluations. Reflective teaching approaches seem to be road rarely followed and hardly supported. Literature and research on the advantages of this technique of teaching is needed to get teachers working without the stick and carrot method of coercing teachers to work. As this teaching technique has not drawn enough literature and researches, the study finds it necessary to fill this gap and contribute to knowledge in appraising the influence of reflective teaching on teacher effectiveness in tertiary institutions in Cross River State. The problem of the study was to determine the extent reflective teaching techniques influence teacher effectiveness in tertiary institutions in Cross River State.

Objective of the study

The study appraised reflective teaching techniques and teacher effectiveness in tertiary institutions in Cross River State. Specifically, the study:

1. Determined the extent journal teaching techniques relate with teachers' effectiveness in tertiary institutions in Cross River State.
2. Ascertained the extent mind mapping teaching techniques relate with teachers' effectiveness.
3. Assessed the extent the use of teaching inventories technique relates with teachers' effectiveness.
4. Determined the extent video-recorded teaching practices relate with teachers' effectiveness.
5. Investigated the extent use of teaching portfolio technique relates with teachers' effectiveness.
6. Examined the extent departmental observation feedback techniques relate with teachers' effectiveness.

Research questions

The following research questions guided the study:

1. To what extent does Journaling teaching technique relate with teachers' effectiveness?
2. How does mind mapping teaching technique relate with teachers' effectiveness?
3. To what extent does the use of teaching inventory technique relate with teachers' effectiveness?

4. How does video-recorded teaching practices technique relate with teachers' effectiveness?
5. To what extent does teaching portfolio technique relate with teachers' effectiveness?
6. To what extent does departmental observation feedback relate with teachers' effectiveness?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. There is no significant relationship between journaling teaching technique and teachers' effectiveness.
2. There is no significant relationship between mind mapping teaching technique and teachers' effectiveness.
3. There is no significant relationship between teaching inventory technique and teachers' effectiveness.
4. There is no significant relationship between video-recording teaching technique and teacher effectiveness.
5. There is no significant relationship between teaching portfolio technique and teachers' effectiveness.
6. There is no significant relationship between departmental observation feedback technique and teachers' effectiveness.

II. REVIEW OF RELATED LITERATURE

The study reviewed related literature in the following areas:

- 1) Journaling teaching technique and teacher effectiveness
- 2) Mind mapping teaching technique and teacher effectiveness
- 3) Teaching inventories technique and teacher effectiveness
- 4) Teaching portfolio technique and teacher effectiveness
- 5) Departmental observation feedback technique and teacher effectiveness

(1) Journaling teaching technique and teacher effectiveness

Journaling is generally referred to as writing about teaching and learning experiences. Reflective journaling can help the teacher process a complex



teaching experience and analyse why it happened the way it did. It provides an emotional outlet, where teachers explore emotions related to situations, new experiences and emerging values and social responsibilities (Woperies, Sloep & Portman, 2018). The sharing of this feeling is however, personal. Journaling is an effective reflective teaching strategy for effective learning outcome which increases critical thinking, value development and expression of feelings in script to deepen learning experiences (Epp, 2008).

Keeping, writing and using journals as instructional technique are reflective teaching practices. Journal teaching techniques commends the teacher to the habit of documenting teaching practices and experiences. The technique encourages teachers to write and use books, journals and other instructional documentaries to support and enrich teaching and learning experiences. However, the educational curriculum is always the policy document and referral point from which the Schemes of work, lecture dairies and lesson plans are derived.

In the classroom context, teachers use writing prompts, creative writing routines to help students develop self confidence and insights in conceptual knowledge. Written assignments are used to enhance critical thinking on basic topic areas. Journaling teaching technique has the advantages of emotional exploration, coping, increased learning and improved writing. The technique is however criticized for its difficulty in grading and increased time to grade (Swennen, Lenenberg & Korthagen, 2018).

(2) Mind mapping teaching technique and teacher effectiveness

Mind map is a tool in teaching and learning experiences that allows users to create and share visual representations of things like lectures, notes and research. It is a powerful note taking method that not only highlight important facts, but also show the overall structure of subject and relative importance of individual parts of it Akinoglu & Yasser (2007).

In concept mapping associated ideas are explored and connected using keywords. For instance, mnemonics can be applied to teach students how to improve knowledge retention. When a teacher rethinks or retells events, it is possible to categorize events, emotions, ideas and to compare the intended purpose of a past action with the results of the action. Stepping back from the action permits critical reflection on a sequence of events (Paterson, Collin & Chapman, 2013).

Mind mapping is an important way to bring together theory and practice. Through reflective mind mapping, a person is able to see and label forms of thought and theory within the context of his or her work (Barry, 2017). Reflection or learning from experience is a key to staying accountable, maintaining and developing aptitude throughout a teacher's practice. Through mind mapping teachers are able to look objectively at their actions or take into account the emotions, experience, or consequences of actions to improve their practice using objective goals (Gelfuso & Dennis, 2014).

(3) Teaching Inventory Technique and teacher effectiveness

Teaching Practice Inventory (TPI) relate to teaching technique which allows faculty members to reflect on effective teaching practices as a baseline in the evolution of teaching practice. Teaching inventories always keep track of teaching practices such as: course learning outcomes, supporting materials provided, in- class activities, assignments, feedback and testing, training and guidance of graduate teaching assistants and collaboration in teaching. Teaching inventories can often be completed by the instructor to obtain an overall assessment practices. Teaching inventories are used in self assessment or reflective teaching approaches. There are varieties of published observation protocols and inventories for reflective teaching approaches including: Teaching Dimension Observation Protocol (TDOP) and the Teaching Practice Inventory (TPI) Trigwell & Prosser (004).

With a variety of teaching approaches occasioned by the interface of educational technology, new teaching techniques, strategies and methods have evolved to reduce the stress associated with traditional classroom instruction Dymet & O'Connel (2014). The teachers can now avail themselves with the opportunity of using flipped classroom for independent learning. Web-based learning platform has as well become a virtual library for research and improvisation of instruction materials. Computer-based assessment test has also brought immediate feedback on test performance. Cooperative teaching has also brought innovative teaching strategies with team teaching that takes away the stress associated with course overload. These teaching and learning opportunities have created a world of teaching inventories for teacher self development and professionalism.

(4) Video recorded teaching technique and teacher effectiveness.

Recorded videos as instructional materials are unique and supportive strategy for continued



growth and development of teaching and learning. Videos are used both asynchronously and synchronously to assist both students and teachers in the teaching learning process. Educational video conferences, interactive webinars, chat-based online discussions, and lectures that are broadcast at the same time provide exciting and refreshing moments for the students and teachers Sharin and Van (2001).

Classroom experiences with video recorded instructions increases learner participation when recorded lectures are watched re-winded and recalled for knowledge cognition Jacobs, Lamb & Philipp (2010). Video-recorded lectures can as well be paused for illustration, shared for independent learning as such materials appeal to all the senses of learning. Instructional videos can reproduce much of the complexities and richness of classroom interaction that needed later commentaries and response. Video based lectures increase student attention as life streaming of lectures is practical learning experiences which reduces cognitive overload for both teachers and students.

Videos as instructional materials give teachers time to observe many things in the classroom and reflect on the ways on what was going on. Research has shown that students' skills do not develop with experience alone; recording focused on students can set teachers up for ongoing inquiry and learning Leitch & Christophe (2018). Teacher can revisit past videos or use what they have noticed to prepare for the next recording. Teachers also gain insight from reviewing their videos and selecting clips to share with colleagues. In some cases when the videos are watched new things are noticed. This has made video instructional strategy a reflective teaching practice which gives deeper understanding of the teaching process with a deeper, better schemata of teaching Ramsey, (2018).

(4) Teaching Portfolio technique and teacher effectiveness

Teaching portfolio is a reflection of thinking and professional development experiences of teachers which provides evidence of a person's teaching accomplishments through a collection of teaching and learning artifacts. Portfolio is more than a miscellaneous collection of artifacts or an extended list of professional activities. It is effective way to assess teaching quantity. Portfolio teaching technique provides opportunities for self reflection and collegial interactions based on documented episodes of the teachers' own teaching Clark (2022). A well organized teaching portfolio gives a significant advice on teacher's professional growth.

The strategy captures the complexities of professional practice in ways that no other approaches can. Since teaching portfolio is a collection of information about a teacher's teaching practice, teacher portfolio provides a demonstration of how a teacher approaches his or her work and present evidence of teacher's thinking, creativity, usefulness and effectiveness Boileau (2022).

As individual teacher teaching philosophy makes every teacher unique, record of teacher accomplishment is an intrinsic motivation for improved job performance. An overview of portfolio technique shows that portfolio feedback on teacher performance encourages better teaching strategies. Record of class- in- actions helps in effective class management even as continuous assessment explores student strengths and weaknesses and course evaluation brings innovative inputs in learning content Ramsey (2018). However, organizing teacher portfolio can be time consuming to construct and as well cumbersome to review.

(6) Departmental Peer Observation Feedback and teacher effectiveness.

Peer Observation Feedback Teaching Technique is a collegial professional development approach that encourages the teaching practioner to analyze, critique, practice, reflect and revise instructional practices. Worrel and Kuterback (2017) have alluded to teaching observation by pointing out the necessity of applying teaching experiences as self assessment to improve on subsequent performances. Observation and feedback for teachers is key to a range of professional learning experiences. Such experiences include:

- Self reflection/self observation
- Providing feedback
- Coaching/self coaching/ peer coaching and expert coaching
- Mentoring and
- Sharing with community of practice (Joyce & Showers (2002:5).

In teaching and learning, lesson observation underpins the very best performance development in watching others and oneself in action. Unfortunately, observation is widely disliked by teachers because they often tie lesson observation as performance evaluation. A useful guidance for effective observation is not for assumptions; that one knows the full context in teaching learning situation but to learn and ask thoughtful questions that will help the teacher have reflection on their lessons. The experience of peer observation has to



be reciprocal; learning is by observation and being observed Kane, Douglas & Staiger (2008).

The observer has to focus on instructional support and watch the teacher not the students. It is a teaching learning strategy that provides analyses on the: Strength, Weakness, opportunity and Threat (SWOT) of a teacher. Departmental observation creates a culture of continued teacher improvement. It is an on-the-job support for skill development and acts as instant feedback on teacher performance and portfolio review of teaching competencies. The technique has made collaborative interaction a key element in teaching and encourages professional development Rolf, Fresher & Jasper (2014).

Through observation and feedback, instructors ask trusted colleagues or administrators to observe their classroom and give them feedback on their teaching. Reviewing practice through different lenses makes teachers more aware of the power dynamics that infuse all practice settings. On the above premise, Brookfield noted that critically reflective practitioners constantly research their assumptions by seeing practice through four complementary lenses: the lens of their autobiography as learners of reflective practice, the lens of other learners' eyes, the lens of colleagues' experiences, and the lens of theoretical, philosophical and research literature (Brookfield, 2017)

III. Summary of Reviewed literature

Repeated research findings have alluded to teachers as the fulcrum of success in academic achievement. Such researches have consistently shown that teachers have the greatest potential to influence education through continuous self training to be able to cope with the challenging demands of today's classrooms.

For instance, teaching inventories are developed to help instructors assess their teaching approaches while video recording of lessons is equally becoming popular on significant topics. Instructors can video-record their lessons informally or formally, along with an observation protocol in order to self-assess their own practices. A teaching portfolio allows instructors to pull the various components of their teaching into a cohesive whole, starting typically with a teaching philosophy or statement, moving through sample syllabi and assignments, and ending with evaluations from colleagues and students.

Departmental observation supports the theory that there are four lenses in learning. Teacher educators can promote a habit of reflective practice especially among pre-service teachers

through discussions of teaching situations, reflective interviews or essays about one's teaching experiences, action research, or journaling or blogging. Teacher educators must have to be highly skilled in reflective practice as teaching how to reflect requires deploying specific competences. The technique is not without challenges as some practitioners may not understand the reflective process and feel uncomfortable in challenging and evaluating own practice. The process could further be time consuming and the teacher may have confusion as to which situations/experiences to reflect upon. However, the challenges may not likely arise if teachers are taught reflective practice during their initial teacher education to continue to develop such reflective skills in their career.

IV. Methodology

The methodology describes the design of the study, population of study, area of the study, sample and sampling technique, instrument for data collection, procedure for data collection and method of data analysis.

Design of the Study

A research design is the set of methods and procedures used in collecting and analyzing measure of the variables specified in the problem research. The design of the study defines the study type; descriptive, correlation, semi-experimental et-cetera (Creswell, 2014). The design of the proposed is a descriptive and correlation survey.

Descriptive design is a study which aims at describing in a systematic manner, the characteristic features or facts about a given population and seeks to document and describe what exists or the present status of existence or absence of what is being investigated. Descriptive survey design is appropriate for this study as the study seeks to determine, document and describe the influence of reflective teaching techniques on teacher effectiveness.

Area of the Study

The area of study is Cross River State, Nigeria. Cross River is one of the thirty six (36) states in Nigeria located in the south-south geopolitical zone. The state is bounded in the North by Benue State. In the West are Abia and Ebonyi States. In the southern part of Cross River State is Akwa-Ibom State with the Federal Republic of Cameroon in the West.

The state comprises 18 local government areas. They are Abi, Akamkpa, Akpabuyo, Bakassi,



Biase, Boki, Bekwara, Calabar South, Calabar Municipality, Etung, Ikom, Obudu, Obubra, Obaliku, Ogoja, Odukpani, Yakurr and Yala Local Government Councils.

There are five tertiary institutions in the state that offer teacher education. The institutions are: The University of Calabar (UNICAL) and the Cross River State University of Science and technology (CRUTECH), whose campuses are located in Okuku, Obubra, with the Faculty of Education in Calabar. The state has three colleges of education which are: The Federal College of Education, Obudu, the state College of Education Akamkpa and the Steady College of Education, Akparabong, Ikom. These institutions offer teacher education and produce greater percentage of teachers for all levels of education in the state.

Population of the study

The population of the study is 21,456. The population comprises of all the lecturers from the five tertiary institutions selected for this study. The statistics comprises of entire lecturers in the faculties of education in the two universities and the three colleges of education in the state (culled from the admission and personnel units of the institutions, 2018/2019).

Sample and sampling techniques

The sample for the study is six hundred and twenty (620) respondents to be selected from a population of estimated twenty one thousand four hundred and fifty six (21456) students and lecturers. Simple random sampling technique (hat and draw) was used to select the respondent sample size from the population. The stratified proportional sampling technique used in the selection of the sample size based on the homogeneity and heterogeneity of teachers and students especially in the distribution of the population (lecturers and students) in faculties of education in the target universities and colleges of education in Cross River State.

Instrument for Data Collection

The instrument for data collection was a structured questionnaire titled: Appraisal of Reflective Teaching Technique and Teacher Effectiveness Questionnaire (ARTTEQ) in Cross

River State. The questionnaire comprised two sections, A and B.

Section A, will seek information regarding the respondents' personal characteristics. Section B will provide questionnaire items on the techniques of reflective teaching that enhance teacher effectiveness to elicit information from respondents on the application of such techniques in the teaching learning process in their institutions.

The instrument was grouped into six clusters to reflect the six sub-objectives of the study (A, B, C, D, E, and F). The opinion of respondents were rated using 4-point rating scale with assigned values as follows:

Very Great Extent (VGE)	-----
4points	
Great Extent (GE)	-----
3points	
Low Extent (LE)	-----
2points	
Very Low Extent (VLE)	-----
1point	

Procedure for Data Collection

The copies of the instrument were administered to the respondents with the help of 5 research assistants from the five tertiary institutions that offer teacher education in Cross River State. The respondents will be encouraged to complete the questionnaire on the spot for collection to avoid loss and to ensure maximum return.

Method of Data Analysis

Data collected was analyzed as follows: Respondents responses were tallied as rated in the instrument for data collection. The total scores were analyzed using mean and standard deviation. The hypotheses were tested using Pearson Product Moment Correlation (PPMC).

Presentation of results

This section is presented in two sections thus:

Research questions by research question results presentation

Research question 1

To what extent does Journaling teaching technique relate with teachers' effectiveness?



Table 1: Means and standard deviations of respondents responses on to what extent does Journaling teaching technique relate with teachers' effectiveness?

S/N	Items	X	SD	Decision
1.	Reference book is a compendium of school curricular which guides in lecture note	3.20	.42	Agreed
2.	Rubrics of marking scheme is a reliable guide in assessment of test performance	3.00	.90	Agreed
3.	Writing prompt is useful in development of insight to conceptual knowledge	2.99	.63	Agreed
4.	Written assignment enhances critical thinking on basic topics	3.01	.89	Agreed
5.	Course objective is a lead to objective scheme of work	3.81	.40	Strongly Agreed
6.	Lesson diaries enhance recollection	2.61	1.19	Agreed
7.	Creative writing routine encourages self confidence	3.80	.39	Strongly Agreed
Grand Mean		3.20	.63	Agreed

The result of Table 1 showed that the means of all the items including the grand mean agreed that Journaling teaching technique relate with teachers' effectiveness.

Research question 2

How does mind mapping teaching technique relate with teachers' effectiveness?

Table 2: Means and standard deviations of respondents responses on how does mind mapping teaching technique relate with teachers' effectiveness?

S/N	Items	X	SD	Decision
8.	Brainstorming generates participative discussion	3.78	.39	Strongly Agreed
9.	Concept mapping explores associated ideas	3.39	.49	Agreed
10.	Use of mnemonics improves knowledge retention	3.89	.43	Strongly Agreed
11.	Course objective is a road map to objective evaluation	3.21	1.16	Agreed
12.	Keywords elicit associated relationships	2.60	.49	Agreed
13.	Project writing is a storm boarder for knowledge exploration	3.40	.50	Agreed
14.	Goal setting is a guide to programme planning	3.85	.37	Strongly Agreed
Grand Mean		3.45	.53	Agreed

The result of Table 2 showed that the means of all the items including the grand mean agreed that mind mapping teaching technique relate with teachers' effectiveness.

Research question 3

To what extent does the use of teaching inventory technique relate with teachers' effectiveness?

Table 3: Means and standard deviations of respondents responses on to what extent does the use of teaching inventory technique relate with teachers' effectiveness?

S/N	Items	X	SD	Decision
15.	Technology in the classroom reduces the stress of the traditional classroom instruction	3.60	.39	Agreed
16.	Flipped classroom provides opportunity for independent learning	3.19	1.17	Agreed
17.	Web-based platform is a virtual library for research	3.39	.49	Agreed
18.	Improvisation of instructional materials provides cost effective means of classroom management	3.11	1.09	Agreed
19.	Computer-based assessment test brings immediate feedback on test performance	3.60	.48	Agreed
20.	Cooperative teaching brings innovative teaching strategies	3.20	.75	Agreed
21.	Team teaching takes away the stress associated with			



course overload	3.65	.48	Agreed
Grand Mean	3.39	.69	Agreed

The result of Table 3 showed that the means of all the items including the grand mean agreed that the use of teaching inventory technique relate with teachers' effectiveness.

Research question 4

How does video-recorded teaching practices technique relate with teachers' effectiveness?

Table 4: Means and standard deviations of respondents responses on how does video-recorded teaching practices technique relate with teachers' effectiveness?

S/N	Items	X	SD	Decision
22.	Video-based lecture increase student attention	3.59	.51	Agreed
23.	Life streaming of lectures are practical learning experiences that reduce cognitive overload	2.79	.98	Agreed
24.	Video-recorded teaching increases learner participation	3.00	.63	Agreed
25.	Video-recorded lectures can be watched, rewind and recalled for knowledge cognition	3.41	.80	Agreed
26.	Video-recorded lectures can be paused for illustration	2.80	.98	Agreed
27.	Video-recorded lectures can be shared for independent learning	2.99	1.20	Agreed
28.	Video-recorded lesson appeals to all the senses of learning	3.00	.66	Agreed
Grand Mean		3.08	.82	Agreed

The result of Table 4 showed that the means of all the items including the grand mean agreed that video-recorded teaching practices technique relate with teachers' effectiveness.

Research question 5

To what extent does teaching portfolio technique relate with teachers' effectiveness?

Table 5: Means and standard deviations of respondents responses on to what extent does teaching portfolio technique relate with teachers' effectiveness?

S/N	Items	X	SD	Decision
29.	Individual teacher teaching philosophy makes every teacher unique	2.89	.41	Agreed
30.	Record of teacher accomplishment is intrinsic motivation for improved job performance	3.20	.75	Agreed
31.	Feedback on teacher performance encourages better teaching strategies	3.03	.89	Agreed
32.	Course website keeps the teacher abreast of trends in teaching techniques	3.40	.48	Agreed
33.	Record of class-in-actions helps in effective class management	2.81	1.16	Agreed
34.	Continuous assessment explores students strengths and weaknesses	2.96	1.10	Agreed
35.	Course evaluation brings innovative inputs in learning contents	3.80	.39	Agreed
Grand Mean		3.16	.74	Agreed

The result of Table 5 showed that the means of all the items including the grand mean agreed that teaching portfolio technique relate with teachers' effectiveness.

Research question 6

To what extent does departmental observation feedback relate with teachers' effectiveness?



Table 6: Means and standard deviations of respondents responses on to what extent does departmental observation feedback relate with teachers' effectiveness?

S/N	Items	X	SD	Decision
36.	Peer observation feedback teaching technique provide the Strength, Weakness, Opportunity and Threat (SWOT) analyse of a teacher	3.06	.89	Agreed
37.	Peer observation feedback teaching technique creates a culture of continued teacher improvement	3.45	.80	Agreed
38.	Peer observation feedback teaching technique provide on the-job-support for skill development	3.19	1.17	Agreed
39.	Peer observation feedback teaching technique acts as instant feedback on teacher performance	3.38	.45	Agreed
40.	Peer observation feedback teaching technique provide Portfolio review of teaching competence	2.61	1.06	Agreed
41.	Peer observation feedback teaching technique makes collaborative interaction a key element in teaching	3.48	.79	Agreed
42.	Peer observation feedback teaching technique encourages professional development	3.00	.99	Agreed
	Grand Mean	3.22	.88	Agreed

The result of Table 6 showed that the means of all the items including the grand mean agreed that departmental observation feedback relate with teachers' effectiveness.

Hypothesis-by-hypothesis results presentation

Hypothesis one: There is no significant relationship between journaling teaching technique and teachers' effectiveness. To test this hypothesis, Pearson Product Moment Correlation analysis technique was applied on the data to correlate the two sets of scores. The result is shown in Table 7.

TABLE 7

Summary of Pearson Product Moment Correlation Analysis of the relationship between journaling teaching technique and teachers' effectiveness

Variable	N= 617		$\sum xy$	r-cal
	$\sum x$	$\sum x^2$		
Journaling teaching technique	13830	314376	309216	0.631*
Teachers' effectiveness	13573	312175		

* Significant at .05, critical $r = .178$, $df = 615$

The obtained r-value was 0.631. This value was tested for significance. The null hypothesis is therefore rejected because the calculated r-value of the 0.631 is found to be greater than the critical r-value of 0.178 at 0.05 probability level, and with 615 degree of freedom. This result means that there is a significant relationship between journaling teaching technique and teachers' effectiveness.

Hypothesis two: There is no significant relationship between mind mapping teaching technique and teachers' effectiveness. To test this hypothesis, Pearson Product Moment Correlation analysis technique was applied on the data to correlate the two sets of scores. The result is shown in Table 8.



TABLE 8

Summary of Pearson Product Moment Correlation Analysis of the relationship between mind mapping teaching technique and teachers' effectiveness N= 617

Variable	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	r-cal
Mind mapping teaching technique	14665	352395	325347	0.380*
Teachers' effectiveness	13573	312175		

* Significant at .05, critical r = .178, df = 615

The obtained r-value was 0.380. This value was tested for significance. The null hypothesis is therefore rejected because the calculated r-value of the 0.380 is found to be greater than the critical r-value of 0.178 at 0.05 probability level, and with 615 degree of freedom. This result means that there is a significant relationship between mind mapping teaching technique and teachers' effectiveness.

Hypothesis three: There is no significant relationship between teaching inventory technique and teachers' effectiveness. To test this hypothesis, Pearson Product Moment Correlation analysis technique was applied on the data to correlate the two sets of scores. The result is shown in Table 9.

TABLE 9

Summary of Pearson Product Moment Correlation Analysis of the relationship between teaching inventory technique and teachers' effectiveness N= 617

Variable	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	r-cal
Teaching inventory technique	14462	342938	320842	0.368*
Teachers' effectiveness	13573	312175		

* Significant at .05, critical r = .178, df = 615

The obtained r-value was 0.368. This value was tested for significance. The null hypothesis is therefore rejected because the calculated r-value of the 0.368 is found to be greater than the critical r-value of 0.178 at 0.05 probability level, and with 615 degree of freedom. This result means that there is a significant relationship between teaching inventory technique and teachers' effectiveness.

Hypothesis four: There is no significant relationship between teaching inventory teaching technique and teachers' effectiveness. To test this hypothesis, Pearson Product Moment Correlation analysis technique was applied on the data to correlate the two sets of scores. The result is shown in Table 10.

TABLE 10

Summary of Pearson Product Moment Correlation Analysis of the relationship between teaching inventory technique and teachers' effectiveness N= 617

Variable	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	r-cal
Teaching inventory	13326	296844	298558	0.488*
Teachers' effectiveness	13573	312175		

* Significant at .05, critical r = .178, df = 615

The obtained r-value was 0.488. This value was tested for significance. The null hypothesis is therefore rejected because the calculated r-value of the 0.488 is found to be greater than the critical r-value of 0.178 at 0.05 probability level, and with 615 degree of freedom. This result means that there is a significant relationship between video-recording teaching technique and teachers' effectiveness.

Hypothesis five: There is no significant relationship between teaching portfolio technique and teachers' effectiveness. To test this hypothesis, Pearson Product Moment Correlation analysis technique was applied on the data to correlate the two sets of scores. The result is shown in Table 11.

TABLE 11

Summary of Pearson Product Moment Correlation Analysis of the relationship between teaching portfolio technique and teachers' effectiveness N= 617

Variable	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	r-cal
Teaching portfolio technique	13461	302931	303018	0.615*
Teachers' effectiveness	13573	312175		

* Significant at .05, critical r = .178, df = 615



The obtained r-value was 0.615. This value was tested for significance. The null hypothesis is therefore rejected because the calculated r-value of the 0.615 is found to be greater than the critical r-value of 0.178 at 0.05 probability level, and with 615 degree of freedom. This result means that there is a significant relationship between journaling teaching technique and teachers' effectiveness.

Hypothesis six: There is no significant relationship between departmental observation feedback technique and teachers' effectiveness. To test this hypothesis, Pearson Product Moment Correlation analysis technique was applied on the data to correlate the two sets of scores. The result is shown in Table 12.

TABLE 12
Summary of Pearson Product Moment Correlation Analysis of the relationship between departmental observation feedback technique and teachers' effectiveness N= 617

Variable	$\sum x$	$\sum x^2$	$\sum xy$	r-cal
	$\sum y$	$\sum y^2$		
Departmental observation feedback	13588	312836	307926	0.663*
Teachers' effectiveness	13573	312175		

* Significant at .05, critical r = .178, df = 615

The obtained r-value was 0.633. This value was tested for significance. The null hypothesis is therefore rejected because the calculated r-value of the 0.633 is found to be greater than the critical r-value of 0.178 at 0.05 probability level, and with 615 degree of freedom. This result means that there is a significant relationship between departmental observation feedback technique and teachers' effectiveness.

V. Discussion of findings

Research question **one** determined the extent Journaling teaching technique relate with teachers' effectiveness. Items 5 and 7 strongly agreed while responses to items 1, 2, 3, 4 and 6 agreed that Journaling teaching technique relate to teacher effectiveness. The finding is in agreement with Worrel and Kuterback (2017) whose observation alluded to the necessity on the part of teachers to apply Journaling experiences improve on subsequent teaching performances.

Research question **2** determined mind mapping teaching technique relate and teachers' effectiveness. Items 8, 10 and 14 respondents strongly agreed that the items relate to teacher effectiveness while respondents on items 9, 11, 12 and 13 agreed. The affirmation is in agreement with the view of Darling-Hammond (2015) who opined that to master the principles of self reflection through the use of associated ideas in development of teaching experiences as an aspect of on- the- job training is very important.

Research question **3** **was on the** extent use of teaching inventory technique relate with teachers' effectiveness. Respondents from items 15, 16, 17, 18, 19, 20 and 21 agreed that their

application by lecturers relate to teacher effectiveness. The results agree with Paterson, Collin and Chapman (2013) who opined that when a teacher rethinks or retells events, it is possible to categorize events, emotions, ideas and to compare such ideas with experiences and strategies and techniques with peers and contemporaries in the teaching profession.

Research question **4** **investigated the extent** video-recorded teaching practices technique relates with teachers' effectiveness. The responses to the items 22—28 affirmed that the items relate to teacher effectiveness. The findings are in tandem with Wopereis, Sloep and Poortman (2018) who are of the opinion that reflective practice using video recorded instructional materials are important tool in practice-based professional learning settings where people learn with all the senses to own professional experiences, rather than from abstract theories for knowledge transfer. It is an important way to bring together theory and practice.

Research question **5** is on the extent teaching portfolio technique relate with teachers' effectiveness. Similarly, responses respondents on items 29 --- 35 all agreed on their relationship with teacher effectiveness. The result is in line with the opinion of Barry (2017) that through reflection on teaching portfolio a person is able to see and label forms of thought and theory within the context of his or her work. The results are supported by Gelfuso and Dennis (2014) who said without reflection, teachers are not able to look objectively at their actions or take into account the emotions, experience, or consequences of actions to improve their practice.



Last and not the least research question 6 on the extent departmental observation feedback relate with teachers' effectiveness. Respondents on items 36 – 42 agreed that teachers' reflection on the items can lead to teacher effectiveness. The result is in line with Marshal (2017) who opined that teacher educators can promote a habit of reflective practice especially among pre-service teachers through discussions of teaching situations, reflective interviews or essays about one's teaching experiences, action research, or journaling or blogging..

VI. Conclusion

The techniques of reflective teaching are one of the most important sources of teacher personal professional development. Many of such techniques have evolved over time and are seen as being beneficial for teaching professionalism as well as for student teacher training. Reflective teachers master the principles of self-management through utilization of teaching experiences as an aspect of on- the- job training. The on-the-job intellectual and professional experiences of the teaching/learning processes are in tandem with the assumptions of the reflective teaching theory which asserts that teachers are knowledgeable about pedagogy for a lot of teaching techniques learnt from self-inquiry. It is this working with experience that is important in teaching and learning.

Self inquiry is largely reflective teaching through journaling, mind mapping, video based teaching practices and teaching inventories. Such teaching techniques provide self-assessment of teaching, wherein an instructor examines his/her pedagogy, articulates reasons and strengths for their strategies, and identifies areas for revision or improvement. It involves an examination both of one's underlying beliefs about teaching and learning and their alignment with actual classroom practice.

Suggestions

Based on the above results on the various techniques of reflective teaching as an on-the-job teaching practice, the following suggestions are relevant for a continuous improvement in teacher effectiveness:

1. Teacher assessment and evaluation has to embrace to a large extent the ability of lecturers to use writing skills to make teaching and learning more practical for teachers and students

2. Collaborative teaching method needs to be incorporated by universities and colleges for cross cultural educational experiences by practicing teachers as teaching inventories for this could lead to a mastery of more techniques of teaching .

3. Video-recorded teaching practices need to be preserved and stored to address the challenges of instructional materials for student teachers.

4. Portfolio teaching technique is an effective way to assess teaching quantity. Portfolio teaching techniques are opportunities for self reflection and such documented episodes of the teachers need to be referrals for newly employed lecturers.

5. Peer observation technique is a collaborative interaction in the process and has to be made a key element in teaching to encourage professional development for teachers' effectiveness.

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