



Effects of cooperative Strategy and Traditional Lecture Strategy Towards Improving Students' Practical Skills Performance in Building Trade At Science And Technical College in Adamawa State, Nigeria

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Received; 24 June 2016 Accepted; 27 Jan 2017; © The author(s) 2017. Published with open access at www.questjournals.org

ABSTRACT: *The Purpose Of This Study Was To Determine And Compare The Effectiveness Of Cooperative Strategy To Teaching And Traditional Lecture Strategy On Students' Practical Skills Performance In Brick/Blocklaying And Concreting Trade In Science And Technical Colleges. The Design Used For The Study Was Quasi- Experimental, Non- Equivalent Group Design. Bricks/Blocklaying And Concreting Two (Ii) Students From Two Science And Technical Colleges In Adamawa State Formed The Population For The Study. The Total Population For The Study Was One Hundred And Eighty Six (186) Students. All The Students Were Used. The Population Was Divided In To Two Groups Government Science And Technical College; Numan Formed The Experimental Group While Mubi Formed The Control Group. Seven Topics Were Selected From The Bricks/Blocklaying And Concreting Ii Syllabus Of Nabteb Curriculum For The Treatment. Nabteb Students' Practical Skills Performance Instrument For Testing Practical Skills Was Adapted For The Study. The Collected Data Were Analyzed Using Mean, And Z-Test. Two Research Questions Were Asked And Two Null Hypotheses Were Formulated And Tested At 0.05 Level Of Significance. Z-Test Was Used In Testing Hypotheses 1, 2. Hypotheses 1 Was Rejected While Hypotheses 2 Was Accepted. Cooperative Strategy Yielded The Highest Post-Test Mean In The Skills Performance Test In Nabteb Practical Skills Performance Test Instrument Than The Traditional Lecture Strategy. There Was No Gender Influence On The Cooperative Strategy. The Researcher Recommended The Use Of The Cooperative Strategy For Teaching Practical Lessons In Science And Technical Colleges Because The Strategy Shows More Effects In Teaching Practical Skills In Brick/ Blocklaying And Concreting Practical Skills Performance. The Researcher Also Determined The Influence Of Gender On The Strategy And Found That Gender Has No Influence On The Strategy. The Researcher Recommended That, There Should Be Training And Retraining Of The Teachers And Provision Of An Enabling Environment. The Study Also Revealed The Need For Student's Full Participation In Teaching And Learning Process.*

Keywords: *Workshop, Strategy, Traditional, Skills, Practical, Performance And Test.*

I. INTRODUCTION

Technical Education Is A Necessary Form Of Education For Any Nation Because It Provides The Trained Manpower Needed For Rapid Technological And Industrial Development. Peter, Abiodun And Jonathan (2010) Stated That It Is A Form Of Education Involving, In Addition To General Education, The Study Of Technologies And Related Sciences And The Acquisition Of Practical Skills, Attitudes, Understanding And Knowledge Related To Occupations In Various Sectors Of The Economy And Social Life. Federal Republic Of Nigeria (2006) Stated That Science And Technical Colleges In Nigeria Are Established To Produce Craftsmen At The Craft Level And Master Craftsmen At The Advanced Craft Level. Francis (2010) Observed That Teaching Technical Subjects (Trades) Involves Exposing Students To Several Opportunities To Understand Different Types Of Concepts, Principles And Exposing Students To Direct Physical Materials In Form Of Practical Work That Would Make Some Meaning To Their Cognitive Framework. Ogbaba And Eje (2013) Stated That Teaching Must Be Effective And Meaningful To Achieve Its Goal. Effectiveness Of Teaching These Building Trades, Mechanical Trades, Agricultural Trade, Painting And Decoration Trade, Over The Years Has Been Hampered By A Number Of Factors (Bimbola And Daneil, 2010). According To Francis (2010) The Poor Performance Of Students In Examinations Particularly The Practical Aspect Could Be Attributed To The Attitude Of Students. Phelps (2007) Stated That Skills As A Word Is So Often Used But Less

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Known. With Regards To This, Fatokun (2012) Views Practical Skills As A Concept That Is Concerned With Individuals, Manipulation Of Fingers To Produce Objects. He Further Stated That Students Exhibit Various Kinds Of Behaviours Depending On The Various Strategies Teachers Use In Teaching Trades In Their Workshops. This Study Was Designed To Find Out If The Workshop Or Alternative Practical Strategies Would Make Positive Change In The Practical Skills Performance Of Students Of Building Trades In Technical Colleges In Adamawa State. Mayor (2003) Outlined Some Strategies To Guide Instructors In The Use Of Workshops For Teaching Practical Subjects. Tyler (2009) And Ruffai (2012) Suggested That The Strategy Should Be Made Student Centered, Activity Oriented And As Much As Possible Independent With Guide From The Teacher. According Totyler (2009)Students Show High Performance When Taught Using Cooperative Strategy To Teaching Practical Skills. On The Other Hand, Nneke (2008) Described Traditional Lecture Strategy To Practical As More Or Less Theoretical Involving Didactic, Philetic, Heuristic And Guristic Modes. In These Strategies To Teaching The Teacher Is An Arranger Of Activities. He Organizes, Discovers And Documents Instead Of The Students. The Difference With The Cooperative Strategy And Traditional Lecture Strategy Is That In The Cooperative Strategy The Actual Workshop And The Relevant Materials Are Required For Practical While The Traditional Lecture Strategy Could Be In Form Of Theory, Demonstration, Diagram Display And Other Similar Features That Could Be Attended To Anywhere Not Necessarily In The Real Workshop. Francis (2010) Noted That Deplorable Conditions Of Workshops And Laboratories In Adamawa State Prompted Teachers Of Trade Subjects To Use The Traditional Lecture Strategies To Teaching Practical Lessons. Mbasumai (2003) Is Of The Opinion That Whatever Strategy Is Used To Teach Trades Practical Should Be One That Will Improve Students' Skills Performance In Their Trades.

Therefore, Instructional Strategies In Teaching Vocational And Technical Education Is Essential If Well Adopted So That It Can Facilitate The Desired Objectives And Can Improve Standard. Francis (2010), Bender, Cunningham, Duffy & Perry (2010) Specifically Recommended Some Instructional Strategy For Teaching Brick/Blocklaying And Concreting Trade At The Science And Technical College Level Which Involve Concept Mapping, Cooperative Work Skills, Field Trip, Project Work And Cognitive Apprenticeship Among Others. Learners Are Considered To Be Active Organisms Seeking Meaning. That Is, Knowledge Is Constructed In A Community Of People Base Prior Knowledge. Knowledge Is Actively Constructed By The Learner, Not Passively Received From The Environment (Peter, Abiodun & Jonathan, 2010).

Olaitan, Nwachukwu, Igbo, Onyemadri, & Edmondson (2000) Stated Some Important Instructional Strategic Elements Which Include Concept Mapping, Cooperative Works Skills, Cognitive Apprenticeship, Demonstration, Lecture, Project, And Field Trip Among Others. Jonassen (2006) Identified Three Major Roles For Facilitations To Support Students In Cooperative And Cognitive Learning Environments, To Include Modeling, Coaching And Scaffolding. For The Potentials Of Instructional Approaches To Be Fully Annexed, Important Key Elements Or Tools Of The Instructional Approaches That Enhances Effective Teaching / Learning Process Need Be Adopted In Classrooms, Workshops And Labs, (Nwachukwu, 2012).

Jonassen (2000) Argued That The Cooperative Strategy To Teaching Also Provides Students With A Way To Understand A Point Of View Outside Their Own Point Of View. Kerchcher, Swallow And Woodruff (2006) Stated That Cooperative Teaching And Learning Strategy Does Not Just Entail Sharing A Workload Or Coming To A Consensus, But Allows Learners To Develop, Compare And Understand Multiple Perspectives On An Issue. When Students Collaborate, They Articulate Their Goals And Plans Which Encourage A Kind Of Reflection Which Can Lead To Learning Cooperative Strategy To Teaching, Also Known As Collaborative Learning/Work Skills. A Mode Of Teaching, With A Set Of Common Attributes And Features (Bendner, 2010). It Was Cooperative In Nature. The Following Are Its Essential Features: Students Work In Teams To Master Academic Materials, Teams Were Made Up Of High, Average And Low Achievers And Were Racially And Sexually Mixed And Reward Systems Were Group-Oriented Rather Than Individually Oriented. This Study Sought To Compare The Use Of The Cooperative Strategy And Traditional Lecture To See Whether It Could Improve Students' Practical Skills Performance And Whether The Process Could Be Gender Sensitive. Specifically The Study Sought To Determine If;

- (i) There Is No Significant Difference Between The Mean Post-Test Scores Of Students Taught Using Workshops Practical Skills Strategy And Those Taught Using Traditional Lecture Strategy.
- (ii) There Is No Significant Difference In The Mean Practical Skills Performance Of Male And Female Students Taught Using Workshop Skills Acquisition Strategy And Those Taught Using Traditional Lecture Strategy.

II. METHODOLOGY

The Method Used For This Study Was Quasi-Experimental Design, Specifically The Non-Equivalent Type. The Area Of Study Was Adamawa State. One Hundred And Two (102) Students From Government Science And Technical College, Mubi And Eighty Four (84) Students From Government Science And Technical College, Numan Formed The Population. Two Technical Colleges Out Of Four Were Purposively Sampled. The

Two Were Government Science And Technical Collegesmubi And Numan. Government Science And Technical Colleges(Mubi And Numan) Were Purposively Sampled Because They Have Both Males And Females Students And Are Outside State Headquarters.An Instrument Named Students Practical Skills Performance In Building Practical Lesson That Was Validated By Two Experts From Science And Technical College, Yola And Michika, And One Expert In Measurement And Evaluation In Adamawa State Ministry Of Education, Yola. The Students' Practical Skills Performance (Spsp) A Five Point Likert Type Scale Questionnaire Was Made Up Of 25 Items And It Yielded Reliability Coefficient Of 0.77 Using Kuder-Richards Formula $20(K-K_{20})$. The Researchers Assumed That The Effective Use Of The Cooperativestrategy In Teaching Students Practical Lessons Would Improve Students' Skills Performance In Building Trade More Than When The Traditional Lecture Strategy Is Used.

III. METHOD OF DATA ANALYSIS

The Method Of Data Analysis Involved The Use Of Mean, Standard Deviation, And Z-Test. Mean, Standard Deviation And Z-Test Were Used To Compare The Practical Skills Performance Of The Students And Test For Significant Difference In The Performance Of The Two Groups. The Two Formulated Null Hypotheses Will Be Accepted If The Calculated Z-Test Is Less Than The Z-Critical But If Greater The Alternative Hypothesis Will Be Up Held.

IV. RESULTS

H_{01} there Is No Significance Difference Between The Mean Posttest Scores Of Students Taught Using Workshops Practical Skills Strategy And Those Taught Using Traditional Lecture Strategy. See Table 1.

Table 1. Show Z-Test Of The Mean Performance Of Students When Taught Using Cooperative Strategy And Those Taught Using Traditional Lecture Strategy.

Teaching Methods	Mean	Standard Deviation	N	Df	Z-Cal.	Z-Criti.	Decision
Cooperative Strategy	2.77	0.16	102				H_{01}
	4.55						
Traditional Lecture Strategy	2.77	0.55	84	184	1.41	0.19significant	Rejected
	3.16						

Table One Show That The Experimental And The Control Groups Had Pretest Mean Of 2.77 And Posttest Mean Of 4.55 And 3.16 Respectively, This Showed That There Is Appreciable Difference Between The Two Groups. The Result Also Shows That Z-Calculated (1.41) Is Greater Than Z-Critical (0.19). Hence The Null Hypothesis Was Rejected.

There Is No Significant Difference In The Mean Practical Skills Performance Of Male H_{02} And Female Students Taught Using Cooperative Strategy And Those Taught Using Traditional Lecture Strategy.

Table 2.Shows The Mean Practical Skills Performance And Standard Deviation Rating Of Males And Females Taught Using Cooperative Strategy.

Instructional Approach	Gender	N	Df	Mean	Stddevia	Std Error	Z-Cal.	Z-Criti.	Remark
Cooperative Strategy	Male	114	184	33.94	2.93	0.40	0.35	1.30	Not Significant Accepted H_{02}
	Female	72		32.80	2.08	0.54			

Table 2 Shows The Mean Performance Of Male And Female Of (33.94) And (32.80) Respectively. This Shows That There Is No Appreciable Difference In The Performance Of The Male And The Female Students. The Result Also Shows That The Z-Calculated (0.35) Is Less Than The Z-Critical (1.30). Hence The Null Hypothesis Stated Is Accepted And The Alternative Rejected.

V. DISCUSSION

The Test Of Hypothesis Has Shown That Mean Performance Ratings Of Students Taught Using Cooperative Strategy In Teaching Practical Was Significantly Higher Than The Mean Rating Of Those Taught Practical Using Traditional Lecture Strategy. It Could Be That Students Were Enthusiastic Toward The Use Of Cooperative Strategy For Teaching Practical, May Be Because Of The Fact That They Were Fully Involved In The Whole Process Of Teaching. The Finding Of This Study Supports That Of Mayor (2003) That By Using Cooperative Strategy As A Teaching Strategy Students' Practical Skills Performance Would Be Improved Towards Better Performance. This Probably Explains Why The Students In The Experimental Group Did Better Than Those In The Control Group.

This Study Also Found That Both Male And Female Students Are Of Near Equal Performance In Practical Whenever Cooperative Strategy Was Used As A Strategy For Teaching Practical Skills. This Was Revealed By The Statistical Analysis Of Data Showing Mean Performances Gain Of Male And Female To Be 33.94 And 32.80. The Z-Test Also Revealed Z Calculated And Z Critical Of (0.250 And (1.30). This Finding Therefore Shows That There No Significant Difference In The Mean Performance Of The Males And Females Students.

Issues Relating To Gender Have Attracted Much Attention That Scholars Are Interested In Finding Out The Human Attributes That Are Gender Dependent. One Of The Purposes Of This Study Is To Find Out Whether There Is Significant Influence Between Strategy And Gender On Students Practical Skills Performance In Building Trade Practical. However, The Study Has Shown That No Significant Influence Exists Between Strategies And Gender On Students' Performance In Building Trade Practical. Since Gender Is Not A Factor For Poor Performance Of Students In Building Trade Practical But Rather Teaching Strategy Used In Teaching Practical Significant Influence Was Not Expected. The Finding Of This Study Supports That Of Francis (2010) Whose Study On Effect Of Gender Attitude And Achievement In Genetics, Found No Significant Effect Of Gender On Attitude And Achievement. This Implies That Gender Is Not A Factor For Lack Of Students' Performance In Studying Building Trade Practical But The Uses Of Strategies That Cannot Effectively Guarantee Participation Of Students In Practical Classes Make Them Show Poor Attention Leading To Poor Performance. This Is In Line With The View Of Haris And Zhang (2001) That Teaching Strategies Used That Are Teacher-Centered Make Students To Lose Interest In Level Of Performance In Practical Skills Performance, But Are Usually Discouraged By The Manner And Strategy In Which The Course Was Taught, Ogbeba And Eje (2013).

VI. CONCLUSION

From The Findings Of This Study, It Is Concluded That There Was Similarity In The Practical Skills Performance Of The Students Regardless Of Their Gender. This Implies That Teaching Strategies, Not Sex Of Students Is A Cardinal Factor For Stimulating Positive Gain In The Practical Skills Performance Of Students Of Brick/Blocklaying And Concreting Trade. That Student Performed Better When Taught Using The Cooperative Strategy In Comparison With Those Students Taught Using The Traditional Lecture Strategy. Most Importantly There Was No Significant Effect Of Influence Found Between The Strategy And Gender On Students' Practical Skills Performance In Building Trade Practical. This Means That The Sex Of The Students Is Not A Factor For Lack Of Positive Gain In Practical Skills Performance In Brick/Blocklaying And Concreting Trade Practical But The Use Of Strategies That Cannot Effectively Guarantee Participation Of Students In Practical Lessons.

VII. RECOMMENDATIONS

The Following Recommendations Were Made Based On The Finding Made:

- (1) Brick/Blocklaying And Concreting Trade Teachers Or Instructors Should Be Encouraged To Use Cooperative Strategies In Teaching Brick/Blocklaying And Concreting Trade Practical Regularly In Other To Improve Students' Skills Performance.
- (2) Stakeholders In Education Should Organize Training, Workshops And Seminars To Train Teachers On Cooperative Strategies To Teaching.
- (3) The Government, Stakeholders And Private Individual Shouldbuild Functional Workshops For Science And Technical Colleges For Sustainable Development.
- (4) Cooperative Strategies Should Be Used In Brick/Blocklaying And Concreting Practical Lessons As A Way Of Eliminating Gender Difference.
- (5) Students Should Be Made To Participate Maximally In Brick/Blocklaying And Concretingpractical Since This Tends To Generates Positive Gain In Their Practical Skills Performance Which Would Probably Lead To Great Performance.

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