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Assessing the efficiency of three teaching methods: An action research

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Abstract: Appropriateness of teaching methods is a widely discussed and intensely concerned topic in the arena of teaching and learning activities. It still remains arguable despite diverse research studies on the aptness and efficacy of teaching methods. An action research is a popular research study applied in the field of education. It is directed towards solving a practicable problem. The problem in this study was the inefficacy of teaching through the lecture method. The prime objective of this article is to assess the efficiency of three teaching methods: lecture, discussion and lecture along with discussion. The sampling design was purposive and the sample size of this study consisted of entire 36 first-year bachelor of education students studying English education as a major subject at Makawanpur Multiple Campus, Hetauda, Nepal in the academic year 2023. They were taught eight lessons from their text book entitled "New Directions: Reading, Writing and Critical Thinking" for each method and 25 test items were asked to them after teaching each time. The study was carried out by adopting one-shot case study research design. This article winds up with the findings (lecture method: Mean = 9.64, observed t-value =1.233, and critical t-value =2.030 (discussion method: Mean = 13.78, observed t-value = 9.854 and critical t-value = 2.030, and (lecture with discussion method: Mean = 19.19, observed t-value = 26.278 and critical t-value = 2.030) with df= 35 clearly depict that the lecture along with discussion method of teaching was the most effective one of these three methods with potential chances of carrying out action researches on the efficiency of other teaching methods.

Keywords: Action research, discussion, lecture, method, teaching

Introduction

Teaching is a dynamic and challenging profession. Brown (2007) states that "teaching is guiding and facilitating learning, enabling the learner to learn, and setting condition for learning" (p. 7). Multifarious teaching methods tend to emerge and disappear in the course of time. But lecture, discussion and lecture along with discussion are very customary methods of teaching employed especially in developing countries like Nepal. A good teacher always seeks to use appropriate methods to teach the subject matters so that students can be benefitted from teaching in a noteworthy way. Teaching turns to be tough owing to the diverse students who retain different levels of cognitive, creative, receptive and productive aptitudes along with their varied preferential traits. No teaching method, no doubt, is equally suitable to all the students to teach different subject matters in all conditions. Only a resourceful teacher is able to choose a better method of teaching.

This teacher as a researcher was utterly interested in carrying out the action research regarding the efficiency of three teaching methods. Lecture method was used to teach the first eight chapters, discussion method was used to teach the second eight chapters, and lecture along with discussion

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method was used to teach the third eight chapters. Twenty-five objective test items were asked to the students after teaching them. The researcher conducted this action research, because it is normally used by academic practitioners and professionals under the education research. It aims at examining and improving the pedagogy and practice adopted by the researchers. It exists as a method employed for improving practice (Koshy, 2010). It mingles a substantive performance with an inquiry procedure. It is an action controlled by enquiry and a personal attempt at understanding while involved in a course of improvement and change (Hopkins, 2003). It is taken as a means of improving student attainment through a more operative teaching and management of teaching institutions (Cohen & Manion, 1994; Elliott, 1991; Stenhouse, 1975) Educators engaged in action research turn out to be more flexible in their thinking, more open to innovative ideas, and more capable in solving new problems (Pine, 1981). The form of query in the action research is participatory (Creswell, 2015). It makes the participants get engaged. Action research endorses a process of testing innovative ideas (Mills, 2011).

This article is based on the classroom action research results and it will be useful to the teachers who teach creative and critical courses to their campus students in terms of using teaching methods.

Literature Review

Action Research

The phrase 'Action Research' was first coined by Kurt Lewin in his paper on 'Minority Problems' published in 1946 (Kemmis & McTaggert, 1990; Zuber-Skerritt, 1992; Holter & Schwartz, 1993). Action research which signifies as a consistent model of professional advancement endorses collaborative investigation, reflection and dialogue. It stands as a procedure of systematic examination that seeks to advance social issues affecting the lives of ordinary people (Lewin, 1946; Stringer, 2008; Bogdan & Biklen, 1992). It is a tactic for examining questions and finding out solutions to problems people meet in their daily lives (Moen & Solvberg, 2012; Stringer, 2014). It exists as a method employed for improving practice (Koshy, 2010). It mingles a substantive performance with an inquiry procedure and that it is action controlled by enquiry and a personal attempt at understanding while involved in a course of improvement and change (Hopkins, 2003). It obviously indicates that an action research is very vital in the field of education to improve teaching and learning activities.

Teaching

Teaching is an academic process (Centra, 1993) and the process involves the conduction of knowledge (Jarvis, 2002). An effective teaching creates situations in which apt learning takes place (Braskamp & Ory, 1994). A good teacher comes to the act of teaching and learning with his / her own dynamic framework of knowledge and understanding of his/ her own personal, social, cultural and linguistic make-up and that of his/ her students (Shohamy, 2007). Teaching is one of the most popular ways of imparting information, ideas and experiences to bring forth a positive academic change in the students.

Teaching Method

Anthony (1963) defines method as "an overall plan for the orderly presentation of language material, no part of which contradicts, and all of which is based upon, the selected approach (p. 63). Richards and Rodgers (2007) assert that "a method is theoretically related to an approach, is organizationally determined by a design, and is practically realized in a procedure" (p.20). Larsen-Freeman (2000) highlights the importance of methods and asserts "methods serve as foil for reflection that can aid teachers in bringing to conscious awareness the thinking that underlies their actions" (p. ix). Lecture method enables the teachers to deliver a large amount of information (Berry, 2008) to a large number of the students (Quinn, 2000; Williams, 2002) in a short period. It is most economical method of transmitting knowledge (Capon & Kuhn, 2004). Lecture method of teaching is ineffective compared to active learning methods (Marbach-Ad, Seal, & Sokolove, 2001; Jungst, Licklider, & Wiersema, 2003). It is passive, outdated, rigid, one-way and ineffective routine knowledge

transmission (Al-Modhefer & Roe, 2009; Al-Modhefer & Roe, 2010). It fails to give feedback (Killen, 2007) and does not hold the students' attention for active participation (Capon & Kuhn, 2004).

Discussion is a prototypic method of active teaching learning (McKeachie, 2002; Whetten & Clark, 1996; Stewart-Wingfield & Black, 2005). It is an active teaching technique because it enables students to explore issues of interest, opinions, and ideas (Hadjioannou, 2007). Discussion is a useful method to facilitate student learning (Dallimore, Hertenstein, & Platt, 2008; Noblitt, Vance, & Smith, 2010; Hamann, Pollock, & Wilson, 2012; Kosko, 2012). The discussion method can assist students practice their oral communication skills (Wardrope, 1999). Lecture along with discussion involves discussion between students after the teachers deliver their lectures on particular topics. It enhances receptive as well as productive skills in the students.

Methodology

Population and Sample

This article is based on the classroom action research on teaching methods. The total population was 36 bachelor first year education students with English as a major subject at Makawanpur Multiple Campus, Hetauda, Nepal in the academic year 2022-2023. All the students were taken as a sample on the basis of a purposive census sampling technique.

Materials

The materials used in this research were taken from the course book entitled "NEW DIRECTIONS: Reading, Writing and Critical Thinking" which was edited by Gardner (2005). Three units were taught for three teaching methods. The first unit was taught through the lecture method. The second unit was taught through the discussion method, and the third unit was taught through the lecture with discussion method. Each unit involved 8 chapters.

UNIT 1: INTERCULTURAL COMMUNICATION

- Chapter 1: American Values and Assumptions by Gary Althen
- Chapter 2: Where Do We Stand? by Lisa Davis
- Chapter 3: Time Talks with an Accent by Robert Levine
- Chapter 4: Polite but Thirsty by Yaping Tang
- Chapter 5: Friends and Strangers by Margaret K. Nydell
- Chapter 6: A Coward by Premchand
- Chapter 7: The Blind Men and the Elephants by John Godfrey Saxe
- Chapter 8: Humor

UNIT 2: EDUCATION

- Chapter 1: School is Bad for Children by John Holt
- Chapter 2: How the Web Destroys the Quality of Students' Research Papers by David Rothenberg
- Chapter 3: Multiple Intelligence and Emotional Intelligence by David Miller Sadker and Myra Pullack Sadker
- Chapter 4: The Teacher Who Changed My Life by Nicholas Gage
- Chapter 5: Let's Tell the Story of All America's Cultures by Ji-Yeon Mary Yuhfill
- Chapter 6: Coyote and the Crying Song by Harold Courlander
- Chapter 7: First Grade – Standing in the Hall by Cheryl Savageau
- Chapter 8: Humor

UNIT 3: MASS MEDIA AND TECHNOLOGY

- Chapter 1: Computers and the Pursuit of Happiness by David Galenter / An Opposing View by Winn F. Martin
- Chapter 2: We've Got Mail – Always by Andrew Leonard
- Chapter 3: Propaganda Techniques in Today's Advertising by Ann McClintock
- Chapter 4: Students Shall Not Download. Yeah, Sure by Kate Zernike
- Chapter 5: Don't Touch That Dial by Madeline Drexter
- Chapter 6: Conceptual Fruit by Thaisa Frank
- Chapter 7: All Watched Over by Machines of Loving Grace by Richard Brautigan
- Chapter 8: Humor

Data Collection and Analysis

The researcher prepared twenty-five objective test items from each unit to collect the data. The test items were administered to the students after the completion of teaching each unit. The data were maintained in the ratio scale for analysis. The research data were analyzed by using SPSS Version 25. The researcher used the statistical tool mean to compare the mean scores of three posttest scores in terms of the test value that was 9. T-test and one-way repeated measures ANOVA were employed to test the hypotheses.

Steps of Action Research

The researcher followed the following sequential steps to carry out the research study:

Identification of the Problem

Why the students did not secure satisfactory marks in their tests was the problem. Twenty-five objective test items were administered to the students after teaching them the eight chapters through lecture method.

Defining and Delimiting the Problem

The students were interviewed about their problem. They were regular in the classroom. They had a positive attitude towards learning. They prepared written notes suggested by the teachers. The subject teacher was also regular. It was determined that one of the burning problems was the method of teaching.

Analyzing the Causes of the Problem

The teacher taught the students, but they were inactive. They did not take part in teaching learning activities. They just listened to the teacher without proper attention. It was realized that the students must have been active and engaged in learning processes.

Formulating the Hypotheses

The researcher formed six hypotheses that there is no significant difference between (a) the test value and the First Posttest Mean Score of the students, (b) the test value and the Second Posttest Mean Score of the students, (c) the test value and the Third Posttest Mean Score of the students, (d) the First Posttest Mean Score and the Second Posttest Mean Score of the students, (e) the First Posttest Mean Score and the Third Posttest Mean Score of the students and (f) the Second Posttest Mean Score and the Third Posttest Mean Score of the students.

Designing for Testing the Hypothesis

The researcher employed one sample t-test and one –way repeated measures ANOVA for the hypothesis test.

Table 1. Mean Scores of Three Tests

One-Sample Test							
Test Scores	Comparing with Test Value = 9						
	Mean	T	Df	Sig.(2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper
First Posttest Score	9.64	1.233	35	.226	0.64	-.41	1.69
Second Posttest Score	13.78	9.854	35	.000	4.78	3.79	5.76
Third Posttest Score	19.19	26.278	35	.000	10.19	9.41	10.98

Df (35) = 2.030

Table 1 depicts that the mean scores of Second Posttest Score and Third Posttest Score were much higher than the test value (9), while the mean score of First Posttest Score was a bit greater than the test value. The test value was determined on basis of the pass marks of the students in the full marks of 25. This table further exhibits that the observed t- value (1.233) was less than the critical t-value (2.030) and $p > .05$ in case of First Posttest Score while considering a test value 9. It indicates the acceptance of the null hypothesis and shows that there was no significant difference between the test value and the First Posttest Mean Score of the students. The observed t- values (9.854) was higher than the critical t-value (2.030) and $p < .05$ in case of Second Posttest Score. It signifies the rejection of the

null hypothesis and indicates that there was a significant difference between the test value and the Second Posttest Mean Score of the students. Similarly, the observed t- value (26.278) was higher than the critical t-value (2.030) and $p < .05$ in case of Third Posttest Score. It refers to the rejection of the null hypothesis and indicates that there was a significant difference between the test value and the Third Posttest Mean Score of the students.

Table 2. Comparing First Test Score with Second Test Score

Pair-wise Comparisons						
Measure: Posttest Score						
First Posttest Mean Score (I)	Second Posttest Mean Score (J)	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
9.64	13.78	-4.14	.65	.000	-5.78	-2.49

Table 2 shows that the mean score of First Posttest Score (I) was less than the mean score of Second Posttest Score (J). The mean difference (I-J) was noted with negative integer (-4.14) and $p < .05$. It rejects the null hypothesis and shows that there was a significant difference between the First Posttest Mean Score and the Second Posttest Mean Score of the students.

Table 3. Comparing First Test Score with Third Test Score

Pair-wise Comparisons						
Measure: Posttest Score						
First Posttest Mean Score (I)	Third Posttest Mean Score (J)	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
9.64	19.19	-9.55	.495	.000	-10.801	-8.311

The mean score of First Posttest Score (I) was less than the mean score of Third Posttest Score (J). The mean difference (I-J) was noted with negative integer (-9.55), and $p < .05$. It rejects the null hypothesis and indicates that there was a significant difference between the First Posttest Mean Score and the Third Posttest Mean Score of the students.

Table 4. Comparing Second Test Score with Third Test Score

Pair-wise Comparisons						
Measure: Posttest Score						
Second Posttest Mean Score (I)	Third Posttest Mean Score (J)	Mean Difference (I-J)	Std. Error	Sig. [b]	95% Confidence Interval for Difference [b]	
					Lower Bound	Upper Bound
13.78	19.19	-5.41	.489	.000	-6.645	-4.188

Similarly, the mean score of Second Posttest Score (I) was lower than the mean score of Third Posttest Score (J). The mean difference (I-J) was noted with negative integer (-5.41). It shows the rejection of the null hypothesis and shows that there was a significant difference between the Second Posttest Mean Score and the Third Posttest Mean Score of the students.

Table 5. Tests of Between-Subjects Effects

Tests of Between-Subjects Effects						
Measure: Posttest Score						
Transformed Variable: Average						
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	21788.481	1	21788.481	1724.610	.000	.980
Error	442.185	35	12.634			

Table 5 shows that the observed F-value (1724.61) was greater than that of the critical f-value (4.12) and $p < .05$. It shows that the mean values of three tests were statistically substantially different. The mean values of the three test scores as shown in the Table Nos. 2, 3 and 4 indicate the substantial differences in their mean scores.

Findings

The mean score of the students in Second Posttest Score was statistically significantly higher than that of the students in First Posttest Score. Similarly, the mean score of the students in Third Posttest Score was higher than that of them in Second Posttest Score. It means the mean score of Third Posttest Score > Second Posttest Score > First Posttest Score. These findings imply that the lecture along with discussion method was more effective than the discussion. Similarly, the discussion method was more effective than the lecture one since the First Posttest Score was taken after teaching the students through the lecture method; the Second Posttest Score was held after teaching them through the discussion one; and finally the Third Posttest Score was conducted after teaching them through the lecture method followed by the discussion one.

Conclusion

Action research, one of the most practicable and participatory methods in the field of education, involves a cyclic process of planning, taking action, and evaluating that leads to further planning, action and evaluation, and so on. It is oriented to solve the existing problem in the best possible way. Therefore, it is dynamic in its spirit. This brief classroom action research carried out on the efficacy of three teaching methods shows that the lecture followed by the discussion method of teaching was the most operative method of teaching among three methods. It was determined on the basis of the three test scores of students observed after teaching them. The students' involvement in the discussion after being exposed to the learning subject matter is very fruitful to them. The course designers need to focus on preparing the teaching courses that make the student get engaged. This researcher heartily recommends the future researchers to carry out other research studies on the efficiency of teaching methods.

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