

Effect of modular teaching method on democratic values of Grade VIII students

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Abstract

This study reports the effect of modular teaching method as compared to traditional teaching methods on democratic values of grade VIII students. Adopting the quasi-experimental, non-equivalent control group design, the experiment was conducted on two intact grade VIII classes in an elementary school of Mirzapur, UP. The modules prepared by researcher served as the content for the experimental group. The results revealed that the democratic values post test scores of the treatment group had higher estimated marginal means than the control group. Levene's test showed that the homogeneity of variance between the two groups was met for democratic values post-test scores. The univariate effect for democratic values post test scores was significant. The conclusion was that the modular teaching method was more effective for developing democratic values as compared to traditional teaching method.

1. Introduction and Review of Literature

Success of democracy of any country depends upon qualities of its citizens that's why country inculcates good qualities in its citizens through education. As a part of social studies, civic education is aimed to develop ideal citizens. The main aim of civic education is to develop democratic values in

citizens and also develop understanding of its rights and duties so that they can perform as a sensitive and responsible citizen.

A value is principle, standard or quality considered worthwhile or desirable in an individual. Most of our actions and behaviour are based on values, i.e., on what is perceived as evil, good or neutral. These values are often

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held as ideals rather than implemented as realities. The National Policy on Education 1986 stated, "India's political and social life is passing through a phase which poses the danger of erosion to long accepted values. The goal of secularism, socialism, democracy and professional ethics are coming under increasing strain". Dubey (1991) in his study 'A critical study of the concept of value education in India at school level since 1947 to 1986' concluded that values like national integration, brotherhood, secularism and punctuality have been highlighted. Songs and legends, which highlight socially accepted values, are missing from the curriculum. Value crisis is due to lack of ideal leadership and neglect of affective domain in education. In a developing country like India multiple pressures and fast changes in family patterns and standards of living have become stumbling-blocks in the potential of home imparting education on democratic values. It is, thus, the responsibility of the educational system to concentrate its attention on adequate education of students, especially adolescent boys and girls, for democratic values. In the era of transition, the prevailing democratic values should be induced through different strategies so that democracy may survive well (Gardia, 2007).

Values could be promoted through direct or indirect methods. In the direct methods we may use related materials in the classroom and other activities like prayers, songs, stories (fables, fairy tales, folk tales etc.) *slokas*, parables, and proverb and so on. Under the direct approach, two techniques have been suggested. The first is the one based

on, reasoning (inducto-deductive). The second is that of 'discovery'. In Inducto-deductive approach of moral approach opportunities are created to help children acquire moral development through inductive reasoning. In discovery approach the child is expected to discover for himself the virtue/moral principle/law contained in the subject matter or other. Learning experience offered to him. Situations in daily life, poems, prose pieces, *slokas*, proverbs and parables are some material to which this technique can be employed. In activity approach to moral education children are engaged in activities which promote the application of the moral principles and the demonstration of the virtues in daily life. School and its surrounding can provide many such opportunities for moral practice. The most important instructional approach-'demonstration approach' is based on examples and not on mere precept. It is the teacher's own behaviour. This is the anvil on which other instructional strategies meet with success or defeat. He has to show his moral calibre in whatever he thinks feels or does. The Integrated approach to moral education consists in imparting moral education not as separate subject but through the existing subjects and activities, without incurring any extra cost, with no separate curriculum or time table or an extra period. Broadly speaking there are three different ways of implementing these: (1) through maintaining an appropriate environment in the school (2) correlating moral education through other teaching subjects (3) through organisation of co-curricular activities and work experience so as to cover all

the students. In incidental approach to moral education teacher noticed an incident which can be labelled as morally right or wrong do ordinarily occur in every school and he has an opportunity to use it for giving the right moral precept. The values could be promoted by integrating school programmes with co-curricular and other such activities of school like-morning assembly, prayers, cultural activities (group songs, folk dance, shadow play, one act play, fancy dress etc.), games and sports. Some studies related to development of values and teaching technique/method of values were conducted in India. Diwakar (1995) revealed that the intervening strategies can promote the value of democracy and are useful in developing the value of national integration. It was also found that the value of democracy and national integration developed during experiment is retained over a longer period. Joshi (1998) in his study found that the value analysis technique was effective in terms of developing democratic values among students, through teaching of civics. Kapoor's (1995) study indicated that the modified Rokeach's value change instrument used in the experimental intervention programme was effective in bringing about desired value change among the students. Sharma (1994) conducted the study to see and compare the effectiveness of value analysis model in developing value-analysis competencies among B.Ed. trainees and school students. The finding of study indicated the effectiveness of Value analysis model over conventional method of teaching. The major values taken up

are cooperation, dedication to teaching profession, nationalism, perseverance, and scientific temper. Singh (1993) studied development of moral judgement among adolescents and was found school stage is very delicate, maximum attention needs to be given it, and the family must provide a democratic and open environment. Singh (1992) studied the effect of Jurisprudential inquiry model of teaching on value preference and social behaviour of school students and found that Jurisprudential inquiry model was effective for teaching. Ram (1991) studied the development of constitutional values among higher secondary students and found main factors affecting development of values that are curriculum, age, grade, scientific temperament. Dixit (1983) conducted a socio-psychological study on the role of education in political socialisation and found that on political attitude the effect of educational level and stream of education was significant. It means education plays significant role in developing political attitude. Dixit (1983) conducted a socio-psychological study on the role of education in political socialisation and found that on political attitude the effect of educational level and stream of education was significant. It means education plays a significant role in developing political attitude. Varshney (1984) assessed the civics curriculum from the point of view of citizenship education and concluded there is no impact of the civics course. She suggested that before any other changes is contemplated the civics curriculum of U.P. board needs to be supplemented by prescribing some activity programme which should be

laid down with a view to providing opportunities to students for the exercise of civic sense in theory and practice. Gardia (2007) concluded in his study that higher secondary students are good in the value of 'Cooperation' whereas they, are poor in the value of 'Liberty'. They are in moderate status with respect to the value of 'Equality' 'Dignity of individual' 'Justice' and 'Tolerance'. Providing creative stimulation in school environment is ideal for the development of Democratic values. Hence, it is quite evident through the above mentioned analysis on education and democracy that education helps in developing democratic values for strengthening and nurturing democracy.

The humanities, natural sciences and social sciences abound in opportunities for moral inquiry (Mitias, 1992); Lickona (1991) believes "the academic curriculum has been a sleeping giant in values education". Empirical research on the effectiveness of ethics training integrated into standard academic classes, however, reports mixed outcomes: some researchers have found the approach unsuccessful (e.g. Ladenburg, 1977); others reports observable, but statistically non-significant, growth in moral maturity (e.g. Garrod, 1989); and still others have documented statistically significant positive outcomes (e.g. Sullivan, 1975). Overall, Rest and Thoma's (1986) meta-analysis of intervention studies found academic courses to be relatively ineffective compared to dilemma discussion groups and personality development programmes. An apparently common and key ingredient of the successful academic courses, however, is that they

incorporated small group's discussions of ethical dilemmas into the curriculum (Hayes, 1991; Kuhmerker, 1991). Higgins review (1980), for instance, concluded that the "most powerful interventions for stimulating moral stage change are those that involve discussion of real problems and situations occurring in natural groups, whether the family or classroom, in which all participants are empowered to have a say in the discussion".

The popular notion now is that values are better caught than taught, the truth is they are both caught and taught. This time however, the learning does not solely come from educator/teacher. The role is shared with other learners. In this light the educator/teacher is more of a guide and a facilitator. Values cannot be forced even if conveyed with good intentions. No real integration or internalisation of a value can be achieved unless the learner desires or agrees with said value. Values may be shared and argued but not imposed. The individual holds the right to his or her own choices in life. The valuing process necessitates experimental learning. The educator simply provides the learning opportunity and atmosphere from which genuine exploration, expression and discovery may freely occur. In the end, learners act on the values that they consciously choose own.

Values can be taught through modular approach. Modular approach in teaching is a recent development and is a modification of an improvement upon the famous concept of programmed instruction. "A module is a set of learning opportunities organised around a well-defined topic which

contains the elements of instruction, specific objectives, teaching learning activities and evaluation using criterion referenced measures”(UNESCO,1988). Modular teaching is one of the most widespread and recognised teaching learning techniques in United States of America, Australia and many other western countries including Asian region. Modular teaching is used almost in all subjects like, natural sciences as well as in computer science (Farooq, 1997). Modular teaching is concerned for each pupil as an individual with his own special aptitude and interest, goal of helping each student to think for himself and allowing the individuality to each learner. The emphasis must be on individual student with unique abilities, aspiration and influencing experiences and, again to provide quality education, the teacher must personalise and individualise the instructional programme (Manlove and David, 1985). The use of modular teaching method has been widely investigated in the field of sciences. Ali (2005) conducted a study on development and effectiveness in modular teaching in biology at secondary level and found that modular approach is more effective than traditional teaching method. Singh (2008) developed a module on fundamental science concepts for primary school children and study its effectiveness. She found that modular teaching is more effective than traditional teaching method attaining science concept. Ragasa (2008) found in their experimental study that Computer Assisted Instruction enhances learning more than traditional teaching method. Adibniya (2012) conducted an empirical study to compare the effect of the modular

teaching method and problem-solving method on academic achievement of the students in natural sciences and concluded that the students being exposed to modular teaching method had higher academic achievement in comparison with the students being taught by problem solving method. Pandya (1974) studied the effectiveness of programmed learning strategy in learning of physics in secondary schools. He found that the gain of the students of experimental group at the post-test score was significantly greater than pre-test scores. Sahazahan (1980) experimented teaching science in Grades VI and VIII through module. He found that the modular way of learning was more effective than the conventional method. Hopper (1982) took up the experimental study in the use of modular approach for teaching biology in Class XI students. He found that modular approach for teaching biology was very effective and modular teaching led to a significant increase in the academic motivation of student.

2 Objective of the Study

This paper aims to find out if teaching democratic values with the use of modular teaching method helps students achieve better in understanding. This has been attempted by looking whether or not there is a significant difference in the effects of the treatment and control group on understanding of democratic values as measured by the post-test.

Hypothesis

Following hypothesis was framed to study the effect of modular teaching

method on democratic values of grade VIII students.

There is no significant difference in understanding of democratic values between control and treatment group.

<i>Pre-test</i>	<i>Independent variable</i>	<i>Post-test</i>
O1	X1	O2
O1	X2	O2

3.0 Research methodology

3.1 Research Design

Research design of this research was of quasi-experimental design with non equivalent pre test-post test that is performed by two-group method. Its model is as the following.

3.2 Sample

The samples for this study were the 69 students of the B.L.J Intermediate School, Mirzapur, U.P. (India) who were enrolled in Class VIII in 2011-12 session. Random assignment of students in groups was not possible. There were two section of Class VIII, A and B. It was decided that VIII A will be control group and VIII B will be experimental group. The 29 students were in the experimental group and 40 in the control group. There were actually 58 students in control group but only 40 participated in the pre-test and the post-test. 34 students in experimental group but only 29 participated in the pre and post-tests.

3.3 Research Instruments

Modules: Modules prepared by researcher for teaching the experimental group. It is a self paced and individual learning material.

- The 1st module was based on respecting women.

- The 2nd module on understanding of equality.
- The 3rd on identifying and developing cooperative behaviour.
- The 4th module was based on understanding of tolerance.
- The 5th module was based on understanding of liberty.
- The 6th module was based on understanding of justice.

The traditional method consisted of lectures given by researcher, recitation and class activities involving the topics discussed during the class. The topics were the same as those given to the experimental group. Text written by researcher was used by the students. Each one had a copy of this text/material.

Democratic Value Scale

After consulting Preamble of Indian Constitution, theory of democracy, and empirical evidences in different studies about Democratic values researcher conceptualised democratic values as a set of six values–(1) Dignity of individual (2) Liberty (3) Equality (4) Justice (5) Cooperation and (6) Tolerance. Democratic values have been operationalised in this study as per Kluckhohn (1951) “Students conceptions, implicit or explicit, expressed as their notions” pertaining to the above mentioned a set of six values. Democratic values Scale was developed by researcher. It is a five point rating scale (Strongly Disagree, Disagree, Undecided, Agree, Strongly agree) composed of 50 items based on six dimensions. The scale includes

statements from the all selected dimensions of democratic values namely-Dignity of individual, Liberty, Equality, Justice, Cooperation and Tolerance. Due weightage was given to all the dimensions while selecting items. The scale contains 50 statements which represents all dimensions of democratic values. Hence it has content validity. It has also construct validity as items were selected having t values equal to or more than 1.75 (Edwards, 1975). The scale was given to experts in the fields of education and they agreed that the items in the scale were relevant to the objectives of the study. Hence it has face validity. The present study employed split half method to determine the coefficient of internal consistency. The reliability of split half test is found to be 0.76 by the use of Spearman Brown prophecy formula. The reliability of the whole test was found to be 0.82.

3.4 Data Collection

The democratic values pre-test was administered to students of both groups. Then treatment group given i.e. experimental group was taught by modular teaching method and control group was taught by traditional method. Current research was done during 33 working sessions taking 40 minutes in both classes. Experimental group first was being taught by modular teaching method during 33 sessions (7 weeks) and control group was being taught by traditional method during 33 sessions. After finishing the mentioned teaching period, democratic values of both groups was evaluated by post test. Pre test and

post test was one and the same test for democratic values.

3.5 Analysis of Data

This study used SPSS 16 (Statistical Package for Social Sciences version 16) to compute for the Analysis of Covariance (ANCOVA). Specifically the one way ANCOVA was used because it involves one continuous dependent variable (DV Post- democratic values post-test scores) and one categorical independent variable with two levels i.e. Group=1 (Experimental group), Group=2 (Control group) and one continuous covariates DV Pre (democratic values pre test scores). The covariates were gathered to allow adjustment for prior differences among groups because random assignment was not possible. Means were adjusted for the influence of the covariate.

Table1
Between- subject's factors

		<i>N</i>
Groups	1	29
	2	40

Table.1 shows that there were 29 students in the experimental group (labelled group 1) who were taught democratic values using modular teaching method and 40 students in the control group (labelled group 2) who were taught democratic values using the traditional method of teaching.

Table 2
Descriptive Statistics

	<i>Group</i>	<i>Mean</i>	<i>S.D.</i>	<i>N</i>
DV Post	1	180.69	32.88	29
	2	146.48	34.45	40

Table 2 shows that the mean score of the post test of the democratic values

for the group taught using modular teaching method was 180.69 with standard deviation 32.88 while the group taught traditional method has a mean of 146.48 with standard deviation 34.45.

Before the Analysis of Covariance was conducted, a test between subject effects, or homogeneity of slopes was run. The result of the homogeneity of slopes tests were not significant ($p=0.728$). This ensured there was no significant interaction between the treatment and the covariate (pre-test scores). The results for the homogeneity of slopes were satisfied.

Since the homogeneity of slopes was found not to be significant, the next step was to proceed with the one way Analysis of Covariance (ANCOVA). The purpose of the test was to determine if the treatment group (Modular teaching method) achieved greater gains on the post-test than the control group (Traditional teaching method). The ANCOVA test accounted for the differences in pre-test scores that existed between the two groups. ANCOVA has capability of adjusting for the unequal pre-test scores and offers a fair analysis. Analysis of Covariance (ANCOVA) was performed to determine if there are significant differences between the treatment and control groups, after adjusting for covariate with a respect to their effect on democratic values post-test scores (DV Post). If there is a significant difference, this means that there exists some linear combination of DV Post test for which the groups differ, after adjusting for covariate. Given that there is a significant difference, ANCOVA

was run to determine, the dependent variable differs across the groups. The result shows that the groups differ with respect to DV Post test scores. ANCOVA assumes that the distribution of errors is bivariate normal with the mean 0 and the same covariance matrix for both the treatment and the control groups. Levene's test is used to verify this assumption (Table-3).

The Levene's Test tests the assumption that dependent variable has similar variance for the two groups. It is generally considered that if the Levene statistic is significant at the 0.05 level or better than the null hypothesis that the groups have equal variance is rejected. In practice, people often consider P-values below 0.01 as evidence of a serious assumption with the equal variance assumption. For this data the homogeneity of variance assumption between the two groups is met for DV Post, $p(.056) > .05$. Hence the homogeneity of variance assumption is considered met.

Table 3

Levene's Test of Equality of error variance

	<i>F</i>	<i>Df1</i>	<i>Df2</i>	<i>Sig.</i>
DV Post test	12.913	1	67	.056

The F-test appears in the separate ANCOVA computed on the dependent variable (DV Post test) of Table.4. The F examine tests the null hypothesis that there is no significant difference in the means of dependent variable for the different groups formed by the categories of independent variables. The univariate effects that are significant for DV Post test are DV Pre ($p=.000$) < 0.05 , groups ($p=0.000$) < 0.05 .

Table 4
Tests of Between-subjects Effects

Dependent Variable: DV Post

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	94138.537 ^a	2	47069.269	1.453E3	.000
Intercept	405.161	1	405.161	12.507	.001
DV Pre	74458.168	1	74458.168	2.299E3	.000
group	27581.186	1	27581.186	851.425	.000
Error	2138.014	66	32.394		
Total	1881607.000	69			
Corrected Total	96276.551	68			

Results and Discussion

One way Analysis of Covariance (ANCOVA) was conducted for this study. The independent variable was type of teaching method included two levels; modular teaching method, traditional teaching method. The dependent variable was student's democratic values score and covariate was the students score on democratic values pre-test. Levene's tests shows that the homogeneity of variances assumption between the groups is met for democratic values post test as evidenced by $F(1,67)=12.913$, $p=0.056$. That is $p(0.056) > (0.01)$ (see table-3)

The Analysis of Covariance was significant, $F(1, 66) = 851.425$, $p < 0.001$ (see table-4). However, only 28.60% ($\omega^2 = 0.2860$) of the total variance in democratic values post-test scores was accounted for by the two levels of group (i.e. modular teaching method and traditional teaching method) for the effect of the students democratic values post-test scores. The results showed that students who were taught by modular teaching method ($M=180.69$)

had significantly higher understanding of democratic values, controlling for the effect of their democratic values pre-test scores (covariate), than those students who were taught by traditional method. ($M=146.48$)

In this study the mean score of the post-test scores of democratic values of the treatment group is significantly higher than that of control group. These results are in line with the views of, Hooper (1982), Woods (1986), Ali, R. (2005), Singh (2008) and Adibniya (2012).

Barnes et.al (2000) investigated that operationalisation of modular approach helped in motivating the students and they benefited more from this approach.

Conclusion and Recommendations

On the whole, modular teaching is more effective as teaching-learning process for teaching democratic values as compared to traditional teaching method. Because in modular teaching the students are provided the opportunities of learning at their own pace, according to their ability level and needs.

In the light of findings and conclusions of the study, following recommendations were made.

1. This study proved that modular teaching is more effective mode of instruction for democratic values as compared to traditional method of teaching. This method should be applied to other subjects as well as other level of education. Therefore the teachers of social science should use modular teaching to develop the topics related to democratic values of the students.
2. Modular teaching is a new technique in classroom setting, social science teachers should be provided training in module writing and teaching.
3. The results of single study are insufficient to decide about the maximum use of modular approach in our classroom setting. Thus a series of studies on modular approach in different situations and mixed gender at different levels should be carried out.
4. The study was conducted on only male students, but there is a need to conduct same study on female students also to check the effects of modular teaching.
5. This study examined only the topics related to democratic values, further studies be conducted to investigate the effectiveness of modular teaching for other dependent variables such as attitude towards subject, self-concept, social skills, learning style, and achievement-motivation.

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