

INDIVIDUAL MODERNITY AS LONG-TERM GOAL OF SCHOOLING: A COMPARATIVE STUDY OF INDIAN BOARD TYPES

Sheela Philip, Ph. D.

Assistant Professor, St Teresa's Institute of Education, Santa Cruz West, Mumbai 400054

Abstract

This research was undertaken to compare individual modernity as a measure of school effectiveness among students coming from schools with different Board affiliations. School effectiveness was also evaluated by estimating the residual outcome of individual modernity after partialling out socio-economic status and prior academic achievement. Of 997 students studied (558 girls, 439 boys), 66.4% were from the SSC Board, 19.7% from ICSE, 10.5% from CBSE and 3.4% from IGCSE; 53.6% were from Science faculty, 17.1% from Commerce and 29.4% from Arts. The mean raw individual modernity score was lower in schools affiliated to the SSC Board as compared to those affiliated to the ICSE Board. However, when socio-economic status was partialled out, the mean residual individual modernity score was lowest in schools from the IGCSE Board. When academic achievement was partialled out, the mean residual individual modernity score was higher in schools from the ICSE Board as compared to those from the SSC and IGCSE Boards. School type had minimal effect on individual modernity score, and this was not affected by socio-economic status and academic achievement.



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Introduction

Employers in today's world require their workforce to have soft skills that supplement their professional and technical expertise. Among the desirable psycho-social characteristics is individual modernity.

Individual modernity is a set of attitudes, values and ways of feeling and acting required for participating in a modern society. Openness to change is an essential part of individual modernity. It relates to psycho-social processes within an individual that bring about cultural and ideational changes leading to new ways of thinking, acting and feeling. Sociologists consider it the increasing use of man's rationality and knowledge.

Inkeles (1983) defined individual modernity as a "complex set of interrelated attitudes, values and behaviour forms fitting a thoroughly derived model of the modern man." In their landmark and exhaustive attempt at analysis of the modern man and construction of an

overall measure of modernity, Inkeles and Smith (1974) listed several themes for consideration, which they grouped from the analytic, topical and behavioural perspectives.

Inkeles (1983) summed up a modern person's character as follows: "He is an informed participant citizen; he has a marked sense of personal efficacy; he is highly independent and autonomous in his relations to traditional sources of influence especially when he is making basic decisions about how to conduct his personal affairs; and he is ready for new experiences and ideas, that is, he is relatively open-minded and cognitively flexible." His orientation to the opinion realm is more differentiated and democratic; he shows more awareness of the diversity of attitude and opinion around him.

Kalliath (1988) defined individual modernity as a modern mind-set comprising the following indices: rationality, scientific attitude, universalism, egalitarianism, openness, adaptability, secularism, achievement orientation, empathy, individualism, planning, efficacy and mobility. She devised and validated a scale to measure individual modernity based on these indices; this scale has been used in the present investigation.

In the contemporary world, the qualities of individual modernity are not a luxury, but a necessity. They are not a marginal gain derived from institutional modernization, but are a precondition for the success of those institutions. Diffusion through the population of the qualities of the modern man is not incidental to the process of social development but is the essence of national development itself (Inkeles and Smith, 1974).

According to Inkeles and Smith (1974), "in large-scale complex societies no attribute of the person predicts his attitude, values and behaviour more consistently or more powerfully than the amount of schooling he has received." They believe that the school inculcates these values and attitudes by the distinctive nature of the school as a social organisation, and has little to do with the curriculum. The school modernises through a number of processes other than formal instruction in academic subjects: reward and punishment, modelling, exemplification and generalisation. Those who have been in school longer are better informed and more fluent, have a different sense of time and a stronger sense of personal and social efficacy, participate more actively in communal affairs, are more open to new ideas, experiences and people, interact differently with them, show more concern for others, value

science more, accept change more readily, and are more prepared to limit the number of children they have – in short, are decidedly more modern (Inkeles and Smith, 1974).

Research on school effectiveness also focuses on pupils' progress considering their background and initial attainment. A school's effectiveness is described as "one in which pupils progress further than might be expected from consideration of its intake" (Mortimore). An effective school adds extra value to its students' outcomes in comparison with other schools. The term *value added* is used to mean the extent to which students may have exceeded or fallen below the expected progression from a given starting point. A value-added measure is one that attempts to describe the educational value that the school adds over and above that which would have been predicted given the student background variables and prior academic achievement of the students within the school.

How effective is our education system in fostering individual modernity? Are there differences in the various curricular Board types in achieving this? Little work has been done on comparison of individual modernity between school types by Board affiliation. We attempted to answer these questions by evaluating and comparing individual modernity in students from schools affiliated to the various Board types.

The present research has adopted the value-added approach to the study of school effectiveness. Accordingly, school effectiveness was also evaluated by estimating the residual individual modernity after controlling for socio-economic status and academic achievement.

Definition of the Terms

School Effectiveness: It is defined as the extent of the effect size of the school on individual modernity of students after controlling for their socio-economic status and academic achievement.

Relative School Effectiveness: It is defined as comparative effect of the different school types by Board affiliation in enhancing individual modernity in students.

School Types by Board Affiliation: In the present study, this includes the Secondary School Certificate (SSC) schools affiliated to the Maharashtra State Board of Secondary and Higher Secondary Education set up by the State of Maharashtra, the Indian Certificate of Secondary Education (ICSE) schools affiliated to the Council for the Indian School Certificate Examination, the schools affiliated to the Central Board of Secondary Education (CBSE) set

up by the Central Government, and the schools providing the International General Certificate of Secondary Education (IGCSE) conducted by the University of Cambridge International Examinations.

Individual Modernity: Individual modernity is defined as a modern mindset comprising the following indices: rationality, scientific attitude, universalism, egalitarianism, openness, adaptability, secularism, achievement orientation, empathy, individualism, planning, efficacy and mobility.

Socio-economic Status (SES): It is defined as the extent to which wealth, power and prestige are enjoyed by the person and his/her family.

Academic Achievement (AA): It is defined as the overall percentage obtained by a student in standard X examination.

Aim of the Study

The study was undertaken to compare individual modernity among students coming from schools with different Board affiliations.

Objectives of the Study

The study was conducted with the following specific objectives:

1. To compare (a) raw individual modernity and (b) residual individual modernity scores after partialling out the effect of SES, and (c) residual individual modernity scores after partialling out the effect of AA, among students coming from schools with different Board affiliations.
2. To ascertain the gross and net effect size of school types by Board affiliation on (a) raw individual modernity scores, (b) residual individual modernity scores when the effect of the socio-economic status of the student is partialled out and (c) residual individual modernity scores when the effect of the academic achievement of the student is partialled out.

Methodology

The present study is of descriptive type because it is based on the findings of exploratory research done by earlier researchers. The research includes students' individual modernity as they exist and studies them after the effect of the school types has already taken place. The study aims to determine the effectiveness of schools of the Board types in the development of

individual modernity, and draw comparative conclusions for implementation. Hence it is a descriptive research of the causal-comparative type.

Sample of the Study

Students in the first year of education in Junior Colleges and schools are the population of the present research. Though the research aims to study the influence of school types by Board affiliation, the population consists of first-year junior college students as it enables the researcher to study the influence of school types when the students have just completed their schooling. In order to do this, the data were collected as soon as the standard XI classes began so as to avoid the influence of college characteristics on students.

Comparison between the effects of education in the various school types would be more rational if the students under study have spent at least the last three years of their school education in one school type, giving adequate opportunity for an impact. The present research therefore studies fresh students of Junior Colleges who have spent at least the last three years of their school education in one school and who have just joined First Year Junior College at the very beginning of the academic year.

The population comprises students studying in Standard XI in Junior Colleges affiliated to the Maharashtra State Board of Secondary and Higher Secondary Education and situated in Greater Mumbai, or Junior Colleges attached to schools affiliated to the Central Board of Secondary Education (CBSE) or to the International General Certificate of Secondary Education (IGCSE) situated in Greater Mumbai.

The sample of the present research was selected using a three-stage sampling technique. At the first stage, Junior Colleges and schools situated in South Mumbai, North Mumbai and Central Mumbai were selected using stratified random sampling where the strata included the geographical location of the school/college.

At the second stage, the schools/colleges were selected using stratified random sampling, where the strata were the Arts, Science and Commerce streams.

At the third stage, students were selected using the incidental sampling technique due to reasons beyond the researcher's control.

Care was taken while selecting the sub-samples to ensure that these are in proportion to the number of students passing the Standard X examinations from the SSC, ICSE, CBSE and IGCSE school types.

The sample in the present study included 1063 students. Of these, data from 66 students were not included for analysis (6.2% data wastage rate). Of the 997 students in this research (558 girls, 439 boys), 66.4% were from the SSC Board, followed in order by the ICSE (19.7%), CBSE (10.5%) and IGCSE (3.4%) Boards. Of these, 534 (53.6%) were from Science faculty, 170 (17.1%) from Commerce and 293 (29.4%) from Arts. Table 1 shows the sample size of the study.

Table 1 Sample Size

		Total N	Percent
a	No. of students enrolled	1063	100
b	No. of students excluded	66	6.2
	Reasons for exclusion		No. excluded
	From National Institute of Open Schooling (NIOS)		3
	Not spent last three years in same school		9
	Incomplete information		54
c	No. of students analysed (a – b)	997	93.8

Tools of the Study

For the purpose of measuring the psycho-social variables, only tools of research that can be quantified were used. The following tools that have been validated and published earlier were used:

1. Individual Modernity Scale by Kalliath (1988)¹
2. Socio-economic Status Inventory by Patel (1999)²

The tools were administered over a set duration of 90 minutes in each college. The researcher initially gave the pupils general instructions. She ensured that personal details were entered completely, by individually scrutinising them while the test was in progress.

Techniques of Data Analysis

The following techniques of data analysis are used:

1. Descriptive Statistics, including measures of central tendency and variability as well as estimation of population parameters.
2. Inferential Statistical Techniques
 - a. One-way ANOVA (followed by a post-hoc Tukey's multiple comparison test when appropriate)
 - b. Dyer's regression-residuals method
 - c. Cohen's *d*

Data Analysis

In order to achieve the objectives, null hypotheses have been formulated for the study.

Null Hypothesis 1: There is no significant difference in the raw individual modernity scores of students coming from different school types by Board affiliation.

The technique used to test this hypothesis is one-way ANOVA. The raw individual modernity scores of students were classified on the basis of school types by Board affiliation in terms of SSC, CBSE, ICSE and IGCSE (Table 2).

Table 2 Raw Individual Modernity Scores By Board Types

BOARD	MEAN	95% Confidence Intervals of Means	SD	95% Confidence Intervals of SD
SSC	125.60	124.4 to 126.8	16.05	15.61 to 16.49
ICSE	133.15	131.4 to 134.9	12.39	11.76 to 13.02
CBSE	129.76	126.9 to 132.6	14.82	13.79 to 15.85
IGCSE	126.56	119.8 to 133.4	19.49	17.12 to 21.86
Total	127.55	126.6 to 128.5	15.68	15.33 to 16.03

Table 3 shows the ANOVA for raw individual modernity scores of students by Board types.

Table 3 Anova For Raw Individual Modernity Scores By Board Types

Source of Variation	SS	df	MSS	F
Among Means	9222	3	3074	
Within Group	235600	993	237.3	12.96
Total	244800	996		

Tabulated F for $df = (3, 993)$

= 2.605 at 0.05 level

= 3.782 at 0.01 level

The F-ratio was found to be 12.96, which is significant at 0.01 level for $df = (3, 993)$. Hence the null hypothesis is rejected. Since the F-ratio is significant, Tukey's Multiple Comparison Test was applied, as shown in Table 4.

Table 4 Tukey's Multiple Comparison Test For Raw Individual Modernity Scores By Board Types

	Mean Raw Individual Modernity Score	q	P value
SSC	125.60	8.529	$P < 0.001$
ICSE	133.15		
SSC	125.60	3.639	$P > 0.05$
CBSE	129.76		
SSC	125.60	0.502	$P > 0.05$
IGCSE	126.56		
ICSE	133.15	2.574	$P > 0.05$
CBSE	129.76		
ICSE	133.15	3.259	$P > 0.05$
IGCSE	126.56		
CBSE	129.76	1.49	$P > 0.05$
IGCSE	126.56		

By the Tukey's Multiple Comparison Test, the difference is significant only between the schools of the SSC Board type and of the ICSE Board type.

Conclusion: The mean raw individual modernity score was lower in the schools affiliated to the SSC Board as compared to schools affiliated to the ICSE Board. There was no difference in mean scores between schools of the other Board types.

Null Hypothesis 2: There is no significant difference in the residual individual modernity scores of students coming from different school types by Board affiliation when the effect of the socio-economic status of the student is partialled out.

The technique used to test this hypothesis is ANCOVA. The residual individual modernity scores of students are computed using the Dyer's regression-residuals method. The regression equation for individual modernity score on socio-economic status score is $y = 0.1284x + 111.77$. The residual individual modernity scores of students were classified on the basis of school types by Board affiliation in terms of SSC, CBSE, ICSE and IGCSE. Table 5 shows the ANCOVA for residual individual modernity scores after partialling out the effect of socio-economic status scores of students by Board types.

Table 5 Ancova For Residual Individual Modernity Scores By Board Types After Partialling Out Effect Of Ses

Sources of Variation	SS	df	MSS	F
Among Means	3322	3	1107	
Within Group	219800	993	221.4	5.002
Total	223200	996		

The F-ratio was found to be 5.002, which is significant at 0.01 level for $df = (3, 993)$. Hence the null hypothesis is rejected. Since the F-ratio is significant, Tukey's Multiple Comparison Test was applied, as shown in Table 6.

Table 6 Tukey's Multiple Comparison Test For Residual Individual Modernity Scores By Board Types After Partialling Out Effect Of Socio-Economic Status Scores

	Residual Individual Modernity Scores		q	P value
	Mean	SD		
SSC	-0.27	15.37	3.022	P > 0.05
ICSE	2.31	12.17		
SSC	-0.27	15.37	0.2485	P > 0.05
CBSE	0.004	14.74		
SSC	-0.27	15.37	4.224	P < 0.05
IGCSE	-8.09	19.21		
ICSE	2.31	12.17	1.816	P > 0.05
CBSE	0.004	14.74		
ICSE	2.31	12.17	5.321	P < 0.01
IGCSE	-8.09	19.21		
CBSE	0.004	14.74	3.897	P < 0.05
IGCSE	-8.09	19.21		

By the Tukey's multiple comparison test, the difference is significant only between the schools of the IGCSE Board type and the schools of the other Board types.

Conclusion: The mean residual individual modernity score was the lowest in the schools affiliated to the IGCSE Board after partialling out socio-economic status. There was no difference in the mean residual individual modernity scores between schools affiliated to the other Board types.

Null Hypothesis 3: There is no significant difference in the residual individual modernity scores of students coming from different school types by Board affiliation when the effect of the academic achievement score of the student is partialled out.

The technique used to test this hypothesis is ANCOVA. The residual individual modernity scores of students are computed using the Dyer's regression-residuals method. The regression equation for individual modernity score on academic achievement score is $y = 0.416x + 94.91$. The residual individual modernity scores of students were classified on the basis of school types by Board affiliation in terms of SSC, CBSE, ICSE and IGCSE. Table 7 shows the ANCOVA for residual individual modernity scores after partialling out the effect of academic achievement scores of students by Board types.

Table 7 Ancova For Residual Individual Modernity Scores By Board Types After Partialling Out Effect Of Aa

Sources of Variation	SS	df	MSS	F
Among Means	5398	3	1799	
Within Group	215300	993	216.8	8.3
Total	220700	996		

Tabulated F for $df = (3, 993)$

= 2.605 at 0.05 level

= 3.782 at 0.01 level

The F-ratio was found to be 8.3, which is significant at 0.01 level for $df = (3, 993)$. Hence the null hypothesis is rejected. Since the F-ratio is significant, Tukey's Multiple Comparison Test was applied, as shown in Table 8.

Table 8 Tukey's Multiple Comparison Test For Residual Individual Modernity Scores By Board Types After Partialling Out Effect Of Aa

	Residual Individual Modernity Scores Mean	SD	q	P value
SSC	-1.20	15.43	6.807	$P < 0.001$
ICSE	4.56	11.62		
SSC	-1.20	15.43	1.181	$P > 0.05$
CBSE	0.09	13.93		
SSC	-1.20	15.43	1.13	$P > 0.05$
IGCSE	-3.27	18.57		
ICSE	4.56	11.62	3.551	$P > 0.05$
CBSE	0.09	13.93		
ICSE	4.56	11.62	4.049	$P < 0.05$
IGCSE	-3.27	18.57		
CBSE	0.09	13.93	1.636	$P > 0.05$
IGCSE	-3.27	18.57		

By the Tukey’s Multiple Comparison Test, the difference is significant between the schools of the ICSE Board type and the schools of the SSC and IGCSE Board types.

Conclusion: The mean residual individual modernity score was higher in schools affiliated to the ICSE Board as compared to schools affiliated to the SSC and IGCSE Board types after partialling out academic achievement score. However, there was no difference in the mean residual individual modernity scores between schools affiliated to the CBSE and other Board types.

Effect Size

The effect size of school on individual modernity was computed using Cohen’s *d* as shown in Table 9, which shows the gross and net (after partialling out socio-economic status and academic achievement scores) effect of school type by Board affiliation on gender role attitude scores.

Table 9 Effect Size Of School Types On Individual Modernity Scores

	Individual Modernity Score
Gross Effect Size	0.222
Net Effect Size (SES partialled out)	0.294
Net Effect Size (AA partialled out)	0.215

The preceding Table shows that school type had minimal gross effect on individual modernity scores; there was minimal net effect on individual modernity score when socio-economic status and academic achievement scores were partialled out.

Conclusion: The minimal effect of school type on individual modernity score was not affected by the socio-economic status and academic achievement scores.

Conclusions

1. Students from schools affiliated to the SSC Board had lower individual modernity score as compared to those from schools affiliated to the ICSE Board. There was no difference in mean scores between schools of the other Board types.
2. When the effect of the socio-economic status of the student is partialled out, the individual modernity score was the lowest in the schools affiliated to the IGCSE Board.

There was no difference in the mean residual individual modernity scores between schools affiliated to the other Board types.

3. When the effect of the academic achievement score is partialled out, the individual modernity score was higher in schools affiliated to the ICSE Board as compared to schools affiliated to the SSC and IGCSE Board types. There was no difference in the mean residual individual modernity scores between schools affiliated to the CBSE and other Board types.
4. School type had minimal effect on individual modernity and this was not affected by the socio-economic status and academic achievement scores.

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