

SOCIAL STRUCTURE AND EDUCATIONAL PROCESSES:
A THEORETICAL MODEL FOR DEVELOPED AND LESS DEVELOPED COUNTRIES

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The purpose of this paper is to develop systemic and structural explanations for what seem to be diverse models of educational processes and outcomes, in particular with respect to the determinants of school achievement and career orientations. First the problem as it currently exists in academic and policy circles (the sociology of education and sociology of development) will be described. This will be followed by a discussion of the results of two research projects in which the author is currently involved, and in both cases present a variety of competing explanations. Finally directions toward a structural theory of educational processes are developed and examined.

A recent review of the sociology of comparative education by Ramirez and Meyer (1980: 369-99) has highlighted the need for more research into system-level and structural effects on educational processes to balance the already existing research in comparative quantitative and qualitative case studies of schooling. The authors argue that one feature of much of current educational research has been a downward focus of theory and research to the individual, school or regional level with the unfortunate consequence of detracting attention away from more macro-level concerns in the link between education and society. Some examples of these are the factors affecting the origins and expansion of educational systems, variations in institutional structures of national systems of education, variations in systems of allocation and of the effects of education in 'constructing legitimated authority in modern societies', to name just a few. In the words of Ramirez and Meyer (1980:370):

The institutional effects to which comparative research should call attention are missing from most nominally comparative research designs. Thus the main lines of theory and research in the sociology of education - studies of the status attainment of individuals, and studies of classroom and school organizations - neglect institutional or systemic factors.

There is evidence that this neglect in macro research is changing. The recent conference by the ISA Sociology of Education Research Committee had as its theme 'The Social Origins of Educational Systems', and the work by Margaret Archer with the same title (Archer, 1979) has been regarded as a major contribution to the study of macro-level educational processes.

In the area of educational policy, increasing recognition is being given to the importance of structural change as opposed to technocratic change as a viable means of promoting educational and social development. The recent Education Sector Policy Paper by the World Bank (1980) has been criticised for rightly identifying the problems of education in developing countries as structural in origin, but then recommending non-structural technocratic policy measures, such as increasing and upgrading student places, teachers and physical resources, as solutions (Carnoy, 1980 ; Ahmed, 1981).

While much of this recent shift in focus has tended to utilize systems theory (in the strict sense, rather than theories related to development) it has had nevertheless the more important effect of re-introducing questions of a macro nature into the study of educational processes and outcomes, and has opened-up the search for more general theories of the link between education

and society.

Macro-Sociological Views of Educational Processes

There are several sociological perspectives which attempt to explain educational processes at a macro-level. For the most part, however attention is directed to non-structural, and even micro-level phenomena in explaining macro-level patterns. The question here is whether or not there are different patterns of educational processes, and if so what are the relevant system-level or structural variables which account for them. More particularly, the question is posed here within the context of socio-economic development and seeks to identify those factors which differentiate educational processes between the developed and less-developed societies.

This latter consideration is an important one, for much of the current interest in the variation of educational processes has come about from concerns regarding the contribution of education to national development. Furthermore, the variety of theoretical perspectives and the apparently unpredicted consequences of several decades of immense educational expansion and expenditure throughout the world have forced a reconsideration of the issues and underlying assumptions of both educational research and policy.

There have been a number of important theories attempting to explain the link between education and society, and in particular of the origins and expansion of educational systems. The structural-functional and neo-evolutionary theorists have tended to see formal education as emerging out of the increasing complexity and differentiation of societies. One variation of the functional theories has attempted to link formal education with the emergence of the nation-state and regards it as an adaptive response to boundary pressures generated by involvement in the wider inter-societal network. In effect, formal education is seen as a mechanism for the creation of elites whose task is to maintain and continually reaffirm the national geographical and cultural boundaries in the face of local interests or in other words, to help establish national and ideological uniformity by eliminating local solidarities. The rise of universal schooling poses no problem in this context, as the increasing complexity of society requires a trained and skilled population, but it is argued that the educational system continues to produce elites who, in effect, benefit from the educated masses. Within this particular functional view, mass schooling with a differentiated educational system is easily explainable without resort to the requirements of the capitalist state or conflict between classes or interest groups (Cohen, 1970). (This perspective appears consistent with recent findings both in Australia and the United States concerning the advantage of private schools.)

The importance of education in human capital theory and modernization theory is but a variation of the above, and in many respects has been more closely related to education and development policy. In both of these, the mobilisation of human resources through education is seen as a means of spurring economic growth. In spite of questionable confirmatory evidence, these views of the instrumental nature of formal education continue to exercise considerable influence in current development policy. In his recent Nobel Prize lecture, Theodore Schultz, a human capital theorist, stated that 'a fundamental proposition documented by much recent research is that an integral part of the modernization of the economy of low income countries is the decline of the economic importance of farmland and a rise in that of human capital/skills and knowledge' (Schultz, 1980). At the same time, Schultz stated without ambiguity that 'education accounts for much of the improvements in population quality'.

The difficulties of the structural-functional and neo-evolutionary theories in general, and the human capital and modernisation theories in particular are well documented and will not be dealt with in depth here. Their methodological limitations and the causal assumptions are in themselves crucial considerations in the evaluation of their respective strengths and weaknesses. However, and perhaps more importantly, theories within this paradigm have located the links between education and society within the societies themselves, and the presumed improvement of the productive capacity of a population is seen as resulting from changes in individual characteristics. In other words, development, or lack of it, is seen to depend on the quality of individual characteristics of the population, and policy stemming from these assumptions have tended to place considerable emphasis on the rapid expansion of those institutions which are thought to improve this quality, in particular the kind of schooling which focuses on the inculcation of knowledge and skills seen to be beneficial for development toward greater industrialization and other dimensions of socio-economic progress. As such no reference in these theories is made to aspects of the social structure. They advocate individual, rather than structural change as a means for development. Completely neglected in this perspective is the importance of the structures of both internal and institutional arrangements (i.e., the economy) and international economic relations in accounting for development-related variations between societies, and it is assumed that the differences between the developed and less developed countries rest on differences within the countries themselves.

Radical critics of the structural-functional and neo-evolutionary perspectives have not been completely free from this latter weakness. Bowles and Gintis (1976), for example, do not deny the investment value of education in the improvement of human productivity. However, they contend that at least in capitalist societies, education operates as a mechanism of control in the creation of a docile and flexible work force which serves the needs and power structure of the economy. They regard education as separated from its technical and instrumental function and view it purely in social and relational terms; it preserves the status quo and in the long run because it maintains inequality and serves to reproduce the social order, could be detrimental to the continued economic growth of society. To this extent, radical critics of education in modern capitalist societies are similar to critics in nineteenth century England who opposed the expansion of schooling in such a way that it would include the working classes. What is lacking in the radical critique of Bowles and Gintis however, is any recognition of wider structural characteristics which effect the schooling process, and more particularly, the effects of the international system on the relationship between education and the economy in any given society. Furthermore, the radical critique developed by Bowles and Gintis (as well as that by others such as Bourdieu) can be reduced to a form of functionalism similar to that which they criticise. As with human capital and modernisation theory, they regard schooling as functionally related to the capitalist class system, serving the interests of the dominant class.

Ultimately these views of education and society fail to rise above the country case study level and therefore represent replications which contribute little or nothing to an understanding of systemic or structural variations at the macro-level. This characteristic appears to hold true for advocates of both the functionalist and radical views.

Thus we return to the question posed at the outset of this paper: to what extent do there exist systemic and structural explanations for apparently diverse processes of educational achievement and

other school outcomes, such as educational and occupational aspirations. At this point let us turn to two empirical examples to further illustrate these apparent variations, and explore possible system and structural level explanations.

Levels of Development and Career Orientations

It has become commonplace to speak of the world educational revolution. The expansion of educational systems in virtually every country since 1950 has been explosive, and has resulted in what some have called an educational crisis - high costs and educated unemployed being two of the negative consequences, to name just two. In 1950, the mean participation percentages for each relevant age group from primary, secondary and tertiary levels for all societies were 58, 12.7 and 1.4 percent. Twenty years later, in 1970, these figures were 83, 30.5 and 5.3 percent.

One feature of this educational explosion has been that the desire for more education and higher status occupations seems to be incompatible with the absorbing capacity of economic systems. Indeed it has been argued that the increase in career aspirations and expectations has been far more endemic in less developed countries than developed ones. It appears that in the present world context, there is an ideosyncratic occurrence in the less developed countries whereby the value response to societal economic growth has resulted in an 'explosion' not only of educational demand and participation itself, but in the desire and expectation of high educational and occupational attainments.

In order to examine variations in career orientations I have, during the past several years, been re-analysing the data set from the International Study of Educational Achievement (IEA). For those unfamiliar with this project, in the early 1970's twenty-one countries participated in what has to date been the largest body of comparative research into factors relating to educational achievement. In all some 258,000 students and 9,700 schools participated in the study. In addition to achievement data on standardised tests, information was collected on a wide variety of home background, school and teacher characteristics, and other student outcomes. Included among the latter was information on educational and occupation aspirations. To date, all analyses of these data have been within-country comparisons, that is country replications using standard analytic models. Although these analyses have produced useful information on the determinants of, and the effectiveness and efficiency of educational systems, they have not generated or tested theories relating to system-level or structural variations on educational processes.

The research has focused solely on the question of career orientations. From the already existing analyses at the individual country level some clear patterns have emerged: 1) the academic performance on standardized achievement tests in the less developed countries is lower than the developed countries; 2) that the level of educational and occupational aspirations is higher in the less developed countries (Little, 1978; Saha, 1982); and 3) that the causal models which have thus far been used to analyse achievement have explained more of the variance for the developed than the less developed countries.

TABLE 1
Variance Explained by Blocks and Total Variance Explained For Science Achievement , Seventeen Countries, IEA Population II (Between Student Analyses)

	Level of Development Rank (2)	Home Circumstances	Type of School	Learning Conditions	Kindred Variable	Total Variance
Australia	6.5	16	7	11	5	39
Belgium (Fl)	5.0	8	3	12	4	26
Chile	13.0	13	4	6	2	25
England	2.0	23	17	7	5	52
FRG	6.5	18	2	14	0	34
Finland	10.0	22	6	10	6	41
Hungary	14.0	14	3	5	9	31
India	17.0	3	10	8	3	24
Iran	15.0	5	1	9	2	17
Italy	11.0	10	4	6	4	24
Japan	12.0	23	0	4	12	40
Netherlands	8.0	19	15	10	5	49
New Zealand	9.0	17	12	8	7	45
Scotland	3.0	29	11	9	6	55
Sweden	4.0	18	0	7	12	36
Thailand	16.0	10	3	23	2	37
United States	1.0	22	2	7	6	36
MEAN		16	6	9	5	36
RANGE		26	17	19	10	38

1) Adapted in part from: Comber and Keeves, 1973, Table 9:4, p. 261

2) From Passow, et. al., 1976, Table 3:1, p. 172. The components of the Level of Economic Development Index are: (1) Percentage of GNP produced and employment in the non-agriculture and non-forestry sectors; (2) KWH per person employed (hundreds), and (3) telephones per 100 persons.

Table 1 shows seventeen IEA countries according to their rank on a composite "level of development" index (see Passow, et. al., 1976:172) and the variance explained by variable blocks and the total variance explained. The correlation coefficient of development rank (reverse coded) and total variance explained is .56, which substantiates the above assertion that the amount of variance explained is greater for the developed countries. There have been several explanations put forward to explain these differences. With respect to differences in achievement the most common is that students from less developed countries come from more impoverished backgrounds and attend schools which are far less equipped than those in the more developed societies and hence do not perform as well (Heyneman, 1980). With respect to differences in the explained variance of standard models of achievement, a similar explanation has been adopted, namely that with attenuated distributions in the variables related to home background in the less developed countries, the amount of variance explained by those factors will be limited. Probably the most common explanation for differences in aspirations has been that with economic advancement and expansion of schooling, the perceptions of mobility possibilities increase, with the consequence that students have subjectively realistic but objectively unrealistic aspirations and expectations.

The question here, however, is not which countries have better or worse performances in schooling, or higher or lower career orientations, but rather whether level of development itself exercises an independent effect on career orientations, when other factors such as home background and quality of schooling are held constant.

To this end a strategy has been followed of pooling the individual-level data from all countries and creating a new set of variables which measure the level of development, and then analysing the data ignoring the actual country. So far 10 of the 19 countries have been pooled. A preliminary analysis of six, three developed and three less developed, has shown that with family background, student sex, and achievement scores held constant, there was an inverse relationship between level of development and career orientation. Furthermore, when the indirect and direct effects were examined, the total effects of level of development were about the same as that of home status and

science achievement (see Table 2). Therefore, holding constant home status, sex and achievement, the level of development exercises an independent negative effect on career orientations. How can this be explained?

TABLE 2
Indirect, Direct and Total Effects on Career Orientations,
Pooled Six Country Analyses, IEA Population II*

Independent Variables	Indirect Effects	Direct Effects	Total Effects
Rank (X_1)	-.04	.17	.21
SSex (X_2)	-.03	.10	.07
Home Status	.11	.18	.29
Sci Ach	.00	.25	.25

* U.S.A., England, Australia, Chile, Hungary, and India
From, Saha, 1982, Table 4.

We have already suggested explanations which focus on characteristics of students themselves. Is it possible to suggest a structural or macro-level explanation? Only recently have such efforts been attempted, in particular with respect to unemployment (Irizarry, 1980). A structural explanation of the higher levels of career aspirations in less developed countries could take the following form. In less developed countries, particularly those penetrated by foreign capital, one generally finds a disarticulated form of economic growth or development whereby the various sectors have little relation with each other. The concentration of ownership of agricultural land has increased the population pressures causing large migration flows to the cities. Likewise in the cities local products compete with less expensive imports, thus furthering the pressures to seek employment elsewhere. Industrialization, because largely supported by foreign investment and capital intensive technology, does not create enough jobs for non-skilled, semi-skilled or skilled labour. Therefore with employment possibilities virtually limited to administrative and bureaucratic occupations, there emerges considerable expansion of these sectors, and at the same time pressure on the educational system to provide the kind of training relevant for those occupations - that is the humanities and academic subjects as compared to scientific or vocational ones. As the only relevant avenue for employment and mobility, school students therefore desire ever increasing amounts of education and aspire for the few relatively high status jobs in the tertiary sector. The increased competition for the limited number of openings means larger numbers of highly qualified individuals being unemployed, and also the emergence of the well-known phenomenon of credentialism. As a result the tertiary sector grows (at both ends, catering at the lower income end for those with less education) and inequality within societies experiencing this condition tends to increase - all while economic growth and industrialization increase.

This explanation is not, however, without its own weakness. One concern, for example, is the purely deterministic nature of the structural explanation without any regard for the effects of the educational experience itself. While modernization theorists may not have adequately explained the process of development, they have at least documented well the strong relationship between education and the adoption of certain sets of values defined as 'modern', and included in these values is the desire for upward mobility, consumerism, and other western, 'capitalist' goods and life-styles.

Nevertheless the attempt to articulate a macro-level theoretical explanation for the higher career orientations in less developed countries represents a new direction in the comparative research into education and development, and one that has hitherto been neglected.

Determinants of Achievement in Less Developed Countries

The second empirical example concerning structural factors related to development and educational processes comes from a project commissioned by the World Bank (Husen, et. al., 1978). The project was originally intended to investigate the importance of teachers on student achievement in less developed countries. It originated out of the debate which dominated thinking in western developed countries concerning the factors relating to school achievement. The cumulative research which began to emerge in these developed countries during the 1960's and 1970's indicated that the quality of schools and teachers seem to exercise little effect on achievement, and that the most important effect came from family background and other pre-school factors. Obviously such a view provided little promise for intervention strategies to equalize opportunities and eradicate inequalities.

Persuaded by this line of thinking, World Bank economists began to argue that money spent on the improvement of schools and teachers in less developed countries would not effectively raise the performance levels of students. Since this represented a considerable departure from their previous policy, and because teacher costs comprise from 75 percent to 95 percent of educational expenditures, the Bank sought an evaluation of the state of cumulative findings of research into educational processes in less developed countries.

The resulting report concluded that contrary to the findings in advanced societies, the cumulative evidence quite strongly supported the notion that teacher effects in less developed countries generally outweighed the importance of home background in the educational process. Data from twenty-one countries, thirty-eight separately authored studies, seventeen teacher variables, and 234 individual research results indicated that the model of educational achievement for the less developed societies did not match that which seemed to prevail in the developed societies, (Saha, 1978). The distribution of these research findings, and two subsamples, with respect to direction (positive, negative or null) is given in Table 3.

TABLE 3
 Summary of Results for Teacher
 Effect Research (Numbers in Brackets)^a

	Direction of Relationships			Total
	+	0	-	
I All Teacher Variables	58.0 (134)	35.5 (89)	3.5 (8)	100.0 (231)
II Teacher Qualification Variables	52.5 (43)	39.0 (32)	8.5 (7)	100.0 (82)
III Selected Studies ^b	57.1 (8)	28.6 (4)	14.3 (2)	100.0 (14)

a) This table is a revised form of those first appearing in Saha, 1978, pages 39-40, Tables I, II, and III.

b) A subsample of studies was selected which met the following criteria: 1) the studies related specifically to teacher's years of training or type of qualification; 2) the studies report results of analyses involving either experimental or statistical control for student background characteristics; and; 3) the teacher qualification variable is measured rather than inferred from salary or other school or teacher characteristics. These were nine separately authored studies which met these criteria, and taking into account multiple samples and measures, produced 14 separate findings.

A reanalysis of the IEA data from Chile and India, using an analytical model and methodological procedures different from those in the original IEA studies, supported the cumulative findings (Noonan, 1978). The results of the report influenced subsequent policy by the World Bank, and were more recently endorsed by an equally broad but somewhat different type of study into teacher effects in less developed countries, carried out by the International Development Research Centre in Ottawa, Canada (Avalos and Haddad, 1981). Likewise, a further analysis of the IEA data from the 18

countries in the science study suggested that school and teacher effects in the four less developed countries were underestimated in the original analyses due to the criteria used for variable reduction (Heyneman and Loxley, 1980). These striking differences in the determinants of school achievement merit theoretical explanation.

One explanation that immediately comes to mind is a statistical one. If, as has already been mentioned, the variation in home background in less developed countries is attenuated, then teacher variables represent virtually the only factor contributing to school achievement. Another explanation deriving from similar considerations relates to the non-linear impact or the possibility of threshold effects of school and teacher variables. Clearly the improvement of teacher quality will have an effect on achievement up to a point, but thereafter subsequent increments might have decreasing effects, or decreasing marginal outputs. Thus it is possible that with the wider range of teacher quality in less developed countries, we are in effect examining the achievement process model where the relationship between teacher quality and student achievement is at its strongest, while in western industrialized societies the quality of teachers has passed that of maximum marginal output, and therefore shows little effect. Therefore, in the investigation of educational processes across societies, the effects of the variables of the model may in part be determined by the actual values and variance of those variables, which in turn may be due to the structural characteristics of a society, a salient feature of which may be level of socio-economic development. However, in attempting to provide explanations such as the above, the actual structural characteristics are given only passing attention and the possibilities of developing a macro-level (system-level) theory is hindered if not precluded altogether.

There have been other attempts at theoretical explanation. For example three Canadian sociologists (Bulcock, Clifton and Beebe, 1977) have put forward what they call a language resources theory. From their comparison of educational processes in Britain and India, they argue that it is language rather than material resources which transfer home-background and socio-economic advantage into educational advantage, and hence language resources explains the differences in educational outcomes. The argument is based on the assumption that the 'richness' of home language is not as differentiated in less industrialized societies, and hence exercises less effect on school outcomes. The difficulty with this theory is that it is not developed enough, in that the role of the school and teacher in the educational process itself, in which language resources become a criterion for achievement, is neglected.

A more sophisticated and radical explanation has been put forward by Heyneman (1980). According to Heyneman, the temporal aspect which accounts for variations in educational processes may be due to differences in 'class formation' between the two types of society. 'Evidence that the difference in language, schooling value, and self-confidence are similar between poor and privileged children in some LDCs points to the time that it takes for an economically privileged group within an industrializing society to evolve into a social class' (p. 405). Heyneman's view, while having merit in itself, also neglects the school and teachers, and simply assumes that any differences in performance processes are due to differences in home background. All of these explanations are little more than variations of the 'deficit model' whereby differences in achievement or school success are explained by differences in the students and their families. Other perhaps more important structural explanations are therefore neglected.

One structural approach rests on the proposition that schooling represents a legitimating mechanism for the maintenance of a common ideology and the selection and allocation process into the occupational structure, (Bowles and Gintis, 1976). It is generally argued that the school as we know it today is a product of western urban industrial (capitalist?) society, and presumes a structural system whereby the economy, polity and patterns of social behaviour are closely linked. It has been contended that much of schooling in less developed societies, represents a form of neo-colonialism whereby the interests of former colonial elite structures are preserved (Carnoy, 1974). In other words, in many less developed societies the expansion of western-type schooling represents a form of foreign cultural penetration, or at least a response to economic penetration such that the normal factors affecting school performance in western societies simply do not operate. The effectiveness and efficiency of schooling, then, depends not so much on the inputs of family background and family status, but rather on the inputs of school quality, and in particular the teachers. Thus, while the disadvantage of students and their backgrounds account for some of the difference in performance levels, the quality of the school and its teachers accounts for much more: they are the purveyors of knowledge, modes of thought, and other cultural values, attitudes and beliefs which are 'foreign' to that of students, and as such have 'exclusive' inputs into the educational process.

In pursuing this line of reasoning, it is not being argued that exploitation or other forms of 'symbolic oppression' are necessarily occurring, but simply that models of schooling processes, when extrapolated from the developed to the less developed societies, may operate quite differently due to these structural factors.

Conclusion

This paper began by pointing to the need for macro-level explanations of educational processes. Instead of case studies and replications of within-country educational phenomena, the way has been pointed toward the analysis of these phenomena using system or structural-level explanations. Although comparative research of schooling outputs such as career orientations and academic achievement has been extensive, explanations in societal variations of these outputs have typically resorted to micro-level or non-structural factors.

The thrust of the argument put forward here has attempted to link variations in schooling processes in terms of the effects of international systems and the structural arrangements of individual societies. The generalizations deriving from this perspective are not, and should not, be limited to the developing societies. It is the apparently systematic variations between the developed and less developed societies which have given rise to the sociological question, and more importantly the deviation of educational processes in the latter rather than the former which has provided the point of departure. Like technology, and consumer products, the western industrialized (capitalist?) societies have exported a unique form of schooling to the non-industrialized, and this along with other forms of penetration have given rise to the variations in schooling processes - in the examples presented here, in career orientations and in the salient factors related to academic achievement. One might expect that in time, some of these variations may gradually converge to parallel those patterns found in the industrialized west. However, as long as the patterns of structural relations between the developed and less developed societies persist, so likely will the variations in educational processes and outcomes.

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