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Research in Economics of Education

A TREND REPORT

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Mid-term appraisals and periodic evaluations of the socio-economic programmes have a tremendous advantage from the point of view of future programme formulation and development of future strategies. In the case of research, however, appraisals and reviews of current thinking should be considered with high degree of responsibility and caution. Research is essentially a gradual process. This is particularly true in the case of relatively newer disciplines like economics of education. For any new discipline there is likely to be an initial enthusiastic response and open-hearted welcome by researchers. This has been the experience within discipline of economics of education also. There is, however, only an occasional initiative and interest in the newer aspects. By and large, only the traditional themes in this field continue to attract researchers.

In the case of economics of education, there is yet another problem of mixed treatment from economists on the one hand, and educationists, on the other. Educationists, traditionally averse to considering the economic aspects of the sacred field of education, seem to have been initially overcome by the upsurge of interest among economists in this field. Though this is a welcome development, it also appears that there is still an element of suspicion and lack of fuller conviction among educationists about the utility of studying the economic aspects of education. Unless the educationists, on the one hand, and economists, sociologists and other social scientists, one the other, come together to examine different dimensions of education, the discipline of education will not be enriched and mutual suspicion of the two perspectives will continue. While, prior to the 1950s, education was the concern of only educationists, the mid-1950s, the whole of the 1960s and 1970s reflected the increasing awareness of the economic dimensions of education. During the 1970s and 1980s, however, the sociological dimensions of education seemed to be coming out more and more clearly in a number of research studies. There seems to be a cyclical pattern of ebb and flow in the development of ideas relating to education. This is particularly true in the case of the economics of education. It is sometimes said that, during 1960s and 1970s, education belonged to economists, whereas during the late 1970s and 1980s, the importance of economics seems to have declined and this period is said to belong to sociologists. In the ultimate analysis, education does not simply belong to any one field. If it has to be considered as an effective agent to social change, education should be viewed from the point of view of many disciplines. It is in this background that we are attempting below a review of studies in the field of economics of education, with occasional references to the studies undertaken by non-economists on some of its aspects.

It is proposed to develop a thematic review instead of an author-based one. The major themes that have been selected are the following:

1. Education-economy interdependencies
2. Education and socio-economic equality
3. Problems of educational finances
4. Planning and management in education

This thematic review is followed by a brief analysis of

the directions in which the discipline of economics of education is moving. This analysis also makes few cautionary observations, so that the discipline may take note of some of the basic maladies of its past growth and the pitfalls that must be avoided in charting its future course.

INTERDEPENDENCIES BETWEEN ECONOMY AND EDUCATION

Ideally the economics of education should trace the two-way relationships, in a dynamic setting, between the educational sector and socio-economic factors. Many writings in this field, however, have tried to trace the relationship between the two mainly from the angle of education as an agent of socio-economic change. Policy prescriptions for the educational sector arising out of the study of two-way relationships are likely to be more meaningful than policy prescriptions based on the analysis of one-way relationships. It should be noted that the term, education, needs to be interpreted in a broad sense, to cover skill-generating activities and training, in addition to the usual literacy programmes and formal and non-formal educational activities.

A number of studies falling within this broad coverage have been reported which are concerned with the interdependencies between education and the socio-economic factors (J.S. Panwar 1978, S.K. Nagia 1979, K.S. Deshpande 1985, S. Pinto 1985, M.L. Datta 1985, N.L. Bhale 1985, M.A. Akhtar 1983, N.V. Verghese 1986, Moonis Raza *et al.* 1986, P.R. Panchamukhi 1984, subsequently published in 1987, M.R. Roy 1985, P. Kumar 1980, B. Shankar 1980, M.M. Goel 1986). We present below a quick review of these studies under two broad heads namely, (a) the effect of education on the socio-economic status of the individual and the national economy and policy suggestions for education arising out of these studies and (b) the implications of socio-economic status for education and the concomitant policy implications for education.

(a) From Education to Socio-economic Status

That education has a significant effect on farm productivity and farmers' earnings has been the subject of research studies in India and abroad over the past two decades. However, since farmers have exhibited some initial inhibition concerning sending their children to school and college, the conclusions of these research findings have not been able to substantially influence education policy in relation to farmers. If farmers are allergic to sending their children to school and college for regular, long-term courses, would they be interested in very short-term training? What will be the overall impact of such training on their life-style, attitude and functional knowledge? What should be the content of such training if optimum results are to be realized from it? These are some of the questions which need to be considered in order to make the link between education and the farm sector effective and meaningful. Panwar, on the basis of his study of short-duration agricultural training on farmers' earning, concludes that even a five-day training is likely to lead to a significant increase in the functional knowledge of farmers, significant changes in their attitude and farm practices and also on their earnings. Interestingly, other socio-economic and personal factors like age, cost, size of holding, socio-economic status, etc. do not have a significant effect on the gain in knowledge of the farmers due to the short duration of training.

What is true of farmers may be true for industrial workers also. As the studies by Nagia and Pinto show in two different contexts, technical training and workers' education schemes have proved to be quite useful in increasing workers' productivity and their socio-economic status, though there is much to be desired in the way education and training are imparted, suggesting that there is a scope for significant improvement in these programmes (Nagia 1979, Pinto 1985). Interestingly, some of these studies have also hinted that formal education does not seem to be very necessary for making the training programme effective.

Education and training are likely to have a socio-economic impact through their effect on the employability of the trained and educated persons. There is a general presumption that better-trained and educated persons have a higher probability of getting employment. Whether this presumption is factually true is open to question. A study of the employers' responses conducted in labour-market situations, metropolitan and moffusil, revealed that employers do not assign much weightage to the degrees and certificates of the candidates who seek jobs in different concerns in these two employment markets (P.R. Panchamukhi, 1987). Added to this general phenomenon of the limited relevance of education, there is also the question of devaluation of education as is revealed by the above mentioned study and also from the review of Indian evidence in this context (N.V. Verghese, 1986). Different levels and categories of education are increasingly devalued, indicating that, for doing the same

job, higher and higher levels of education are employed, implying a redundancy of higher levels of education for the purpose of the job. Also, unemployment among the educated is spreading far and wide, with a shift in the employment pattern from the primary to the secondary and tertiary sector. This in itself could be an indication of the limited usefulness of education so far as employment is concerned. Even where education is likely to have better nexus with employment, educational opportunities are not found to be adequate as is revealed from a micro study of the tea garden labourers of Assam (M.L. Dutta, 1985). Similar is the state of affairs so far as educational development and manpower development in Marathwada are concerned (N.L. Bhale, 1985).

Does education offer any other gains for the economy apart from employment and earning advantages for the educated? Are educational revolution and technological revolution closely related? Does the developmental process get intensified and deepened with expansion in education? These are some very relevant questions. The answers may well bring about a renewed interest in education among economic planners.

Based upon data collected from 30,000 rural households in 245 randomly selected villages located in Tumkur district of Karnataka, the study by Moonis Raza, Ramchandran and Manvikar (1986) tried to examine these questions. Though the conclusions were not categorical with regard to these questions, it appears that education does play a positive role with regard to the socio-economic transformation of households and the country. Improvement in the status of women is obviously very closely related to their empowerment, both in terms of employment opportunities and education. Unfortunately, there is a problem here because the employment of women in developing countries is largely in the primary sector and their occupational status is very low. Their propensity to receive education is also very low. As a result, they have a low degree of educational empowerment and economic empowerment, leading to continuation of their low status in society. This was brought out from a study of the changing status of working women in Bihar (B. Shankar, 1980).

Education is thus found to be a useful agent for improvement in socio-economic status so far as groups and communities suffering socio-economic deprivation are concerned. Even in the case of the physically handicapped, education is found to be an investment, suggesting that, with education, such handicapped persons are made more productive economic agents in the society (M.M. Goel, 1986).

That there is a close link between education and development was brought out by a study of education and economic development of Bangladesh (M.M. Roy, 1985). It was found that, so far as Bangladesh is concerned, there is an attempt to effectively integrate education with economic development so that the former contributes to the latter. In this background, and examination of education and manpower planning in the course of the Five Year Plans in India would provide a useful input for framing future policies of integrating educational and socio-economic development. M.A Akhtar (1983) attempts a critical appraisal of educational and manpower planning in India during the Five Year Plans.

(b) From Socio-economic Status to Education

As stated earlier, while education may have significant implications for the socio-economic processes, socio-economic factors would also have significant implications for the educational sector. This reciprocal relationship between socio-economic factors and education is considered one of the bases in manpower strategies and policies for educational development. Apart from the macro-goals of manpower planning, educational demand at the individual level may be significantly influenced by socio-economic factors affecting the individual. That this is so is clearly brought out by the low propensities of the farmers and the socio-economically backward communities to send their children to school or college. Using the data for 772 boys and girls in different courses in Allahabad, the study by P. Kumar (1980) clearly brings out the significant role that the socio-economic status of the family, educational level of the father, occupational status, etc. play in the demand for education. Interestingly, apart from the economic advantages from education, the more important factors behind the desire to seek higher education were found to be non-economic in nature, such as attainment of knowledge, character building, eradication of social evils, etc. This indeed seems to redeem the country's emphasis on higher education.

These ideas about interlinkages between education and socio-economic factors have a powerful policy implication namely, that in order to achieve socio-economic equality there ought to be properly graded 'educational equality'. Obviously, in a country with extreme socio-economic inequalities, the policy of absolute educational equalities cannot lead to desirable results. In order to ensure that education is equitably distributed, it must be unequally distributed. This state-

ment appears to be self-contradictory on the face of it. However, socio-economic equality and educational equality demand unequal treatment of unequals at the hand of education.

This brings us to the question of inequality in education in the socio-economic context.

EDUCATION AND EQUALITY

To what extent does education contribute to socio-economic equality? Given the other socio-economic variables, to what extent can equality in education be achieved by tackling the problems of inter-regional inequality in education? To what extent can the equilization policies be tagged on to the personal circumstances of the aspirants for education? Can such policies be formulated once and for all or should there be flexibility at regular intervals so far as the content, the focus and the emphasis on these policies are concerned? These are some of the major questions in the field linking education with the goal of equality.

There have been a number of studies with some of these issues as their focus. 'Inequality in education—A Socio-economic Perspective' by P.R. Panchamukhi and S. Shirwadkar (1987) presents a comprehensive review of the thinking in this field. Maya Shah (1981) brings out the importance of economic factors in explaining the variations in literacy rate in rural areas of Gujarat. Obviously, farm practices, irrigational facilities, land holdings, proximity to the urban areas, etc. have their own implications for literacy levels in rural areas. A study conducted by NIEPA concluded that the economic base of a region exerts a strong influence on the spread of literacy. T. Maitra (1981) concluded, on the basis of a survey of public education in West Bengal, that, despite serious efforts, public education in the rural areas of the state is far below the level obtaining in urban areas. This conclusion seems to be true for the country as a whole also.

Regional disparities in education need to be properly measured so that policies are effectively directed towards overcoming them. It is not proper to consider only one or two aspects of educational development in order to understand the status of a region so far as educational progress is concerned. Though the Finance Commission and the Planning Commission have methods of measuring educational development in region, there is scope to undertake rigorous methodological studies in this field. P.R. Pamchamukhi (1970, 1983), J.B.G. Tilak (1981) and K.P. Jain (1981) developed some interesting methods of measuring regional disparities in educational development.

Community-specific and individual-specific policies for achieving educational equality have necessarily to be based upon a full understanding of a current profile of inter-personal and inter-community inequalities. N.D. Joshi (1985), A.S. Rajput (1985), B.M. Rajput (1985), and V. Trivedi (1987) have attempted to highlight some aspects of the role of the personal circumstances of the individuals so far as their educational backwardness is concerned. Poor socio-economic conditions at home, a low degree of response and responsibility on the part of teachers towards the educational development of children of backward communities and with poor socio-economic backgrounds, with a low degree of awareness of both their own educational backwardness and economic backwardness in the case of these communities, etc. were found to be responsible for continued social, cultural and educational backwardness of Adivasis in Kerala (Joshi, 1981).

What is true in the case of linkages between socio-economic factors and general educational attainment seems to be true in the case of performance in new subjects and courses also. Based upon a sample of 1000 students from various Central Schools, a study (A.S. Rajput) found that the socio-economic status of children affected their achievement in the important subject of mathematics. V. Trivedi (1987) concluded, on the basis of a study of 523 girls in colleges in Lucknow, that there is a significant relationship between academic achievement, parental attitude and socio-economic status. Students belonging to higher socio-economic status showed better academic achievements.

Obviously, equal distribution of educational opportunities is a precondition for equal educational achievements. The question of 'equal' access and a reasonable supply of facilities to the deprived is obviously linked with general resource availability. The resource question deserves an unconventional approach in the background of the elusive goals of equity and equality. For example, the question of resources for education needs to be viewed not only from the point of view of the agencies supplying education but also from the point of view of the aspirants for education. Surprisingly, the question of educational finances has been considered by researchers as the one relating to only the former namely, finances for supplying education. Also, most of the studies seem to consider the question of educational finances as the one dealing with fees, government

grants, donations, etc. Some of the more effective resources for education which are under the control of the education sector itself do not seem to have attracted the attention of researchers. Since the financial crisis for all the sectors of the economy in general and for the education sector in particular, is likely to grow deeper and deeper in the near future, such endogenous resources for education obviously become increasingly important. One method of mobilizing resources from within the educational sector is by reallotting educational expenditures and also by increasing the efficiency of their utilization. Effective utilization of the facilities within the educational sector is thus very closely linked with the objective of equity in education. This area of utilization of the facilities within the educational sector has remained practically a virgin field for research. There have been some governmental reports at the state level to indicate the extent of facilities available. However, for the purpose of examining the problem of utilization of the facilities fully, the type of data that are provided in the governmental publications are obviously very scanty. Two of such studies (M.L. Deshamukhya, 1984, and L. Deshpande, 1984) considered the question of effective utilization of the facilities given to backward students since independence. It is said that non-utilization of the facilities by backward students has been one of the factors responsible for non-realization of the objective of equality in education. It is also contended that non-utilization is very closely linked with a low degree of awareness about these facilities and also strong resistance from the non-backward communities to the special facilities made available to backward-class students. Based upon a sample study of 522 students and 179 teachers from colleges in Pune, Deshpande concludes that there is much to be desired in the means used to disseminate information about facilities available among backward-class students and their parents. In view of inadequacy of allowances made for these students there is a need for additional facilities and compensatory courses to ensure better and more effective utilization of educational facilities. Another study in the same field attempted to examine the extent to which education and other facilities were available to backward-class students in Jalna district in Maharashtra (Kulkarni, 1985). This study also concluded that the type of facilities available were far from satisfactory. Though such statistical studies with reference to a particular location connot be taken as the basis for drawing generalizations, the conclusion of the study regarding inadequacy of facilities can hardly be doubted.

FINANCING OF EDUCATION

With increasing enrolments and the expanding scope of educational activities, coupled with decreasing resource availablity for the educational sector (in view of competing claims from other sectors) the problem of finance has become increasingly formidable in all sectors of education. The problems are experienced at three levels. First, at the level of the educational sector as a whole; secondly, at the level of sub-sectors of education; and thirdly, at the level of the individual educational institution. These financial pressures—sectoral, sub-sectoral and institutional—would each have its own externalities on students and parents so far as the education of the household is concerned. It also has implications for the quality of education currently provided and the capability of the sector to undertake innovative programmes. Financial pressures, coupled with declining educational standards and the weakening capability of the educational sector to train and educate students according to certain requirements, have also given rise to a new class of institutions which are termed 'parallel educational institutions'. These trends emerged more and more clearly over the past decade or so. The general cost escalations have aggravated the problem of finance for education. In our federal framework, irritants in inter-governmental relations have created additional dimensions to the problem. Studies in this field are therefore expected to consider new themes and issues.

During the 1970s, most studies of educational finances related to examining the problems of individual educational institutions (such as those dealing with university finances sponsored by the ICSSR and UGC) and to the analysis of the prospects of individual sources of finance. From the studies that appeared during the 1980s, there seems to be a slight shift in focus, though the traditional themes have not been altogether abandoned by researchers.

Of the studies, abstracts of which were received for being reported in this survey, three were case studies of university finances, two dealt with the problem of educational finance for primary and secondary education. Two considered the basic question of the linkages between educational finance and the problem of social justice. Five studies considered the effectiveness of scholarships as an instrument for educational equality. Two examined the possibility of getting external funding for education and also the possibility of adopting an innovative approach in budgeting that, through savings

within the educational sector, could provide a dependable source of educational finance.

As stated earlier, the studies in finances for higher education during the 1970s were largely case studies. On the same pattern, three more studies of higher education finances have come to our notice (Singh, 1986; Jena, 1983; Tiwari, 1986). A study of higher education finances in the newly created state of Manipur since 1949 clearly shows that the problems of educational finance which have been observed since 1949 in other parts of the country are also observed in the case of Manipur. There is an unplanned growth of institutions, imbalances in the course of expansion, improper budgeting systems, non-availability of the physical resources necessary for institutions of higher education, etc. While the expenditure on higher education in Manipur increased 727 times between 1949-50 and 1979-80, the UGC's contribution to the development of colleges was only marginal—only about nine per cent of the total expenditure of the colleges from 1960-61 through to 1974-75. Administrative costs accounted for the bulk of university expenditure. It is intriguing that the increase in expenditure on libraries was minimal. By and large, the picture of higher education finances in Manipur presents a good idea of the crisis that the higher education sector as a whole is facing in India.

The case studies of M.S. University of Baroda in Gujarat and Kumaun University in U.P. present the same bleak picture of higher educational finances at the institutional level. As the Baroda University study shows, normally there exists no correspondence of cost with fees in all the faculties and institutions in the country. The fees reflecting the price of education as paid by the students and parents are almost static and hence there is no correspondence at all between cost escalation and the price paid. The library is again a victim of financial crisis, allocations declining in view of the inelasticity of all sources of the income for the university. The grant-in- aid system for different universities was found to be more or less un-responsive to the financial crisis that the universities are facing. The principles of adequacy, efficiency, equity and elasticity which ought to be the bases for ensuring the financial soundness of a university do not seem to have received any pointed attention from the grant-in-aid system. As a result, a university may have a skewed development, with more resources going to certain faculties and to certain activities at the cost of other faculties and activities. In the case of Kumaun University, for instance, per student expenditure in the commerce and law faculties was found to be disproportionately low as compared to that in the case of the science faculty. The Nainital campus received favourable treatment at the cost of the campus at Almora. A study of finances of universities in Madhya Pradesh (G.S. Parashar, 1981) developed a comparative analysis of income, expenditure and unit cost of different universities in the state. The study shows that there is one significant effect of the existence of the government grant. Though the grants are far from adequate and progressive enough for the development of different types of universities in the state, they have nevertheless reduced them into extended wings of the department of education of the government. The Uchha Shiksha Anudan Ayog established by the state in 1973 has not made any change in the system of control of the government on the university finances and administration. Most of the universities in MP are in the red, with large deficits in their budgets. The state and UGC grants for these universities could not change the picture for the better. It is noteworthy that, in spite of the Uchha Shiksha Anudan Ayog, the state UGC, the salary structure, library development, development of student services, etc., are not comparable for different universities in the state. The study identifies the major causes for the financial problems of the universities in terms of huge financial deficits, availability of UGC grants only for development and not for maintenance, the state government's inability to share the financial burdens of the universities, inadequate attention paid to improving efficiency and economy in university expenditure, unnecessary interference of the state in university financial management, and non-availability of reserve funds of endowments in the universities.

Problems of finance have been identified as the main hurdle in realizing the goal of universal elementary education for children below 14 years of age as directed by the Constitution. A study by Misra (1984) draws attention to the different dimensions of the problem of finance for primary education in India after independence. The study brings out the fact that there is very little scope for flexibility in the methodology of primary education adopted for achieving the targets set because of rigidity in allotting financial resources and also because of the fact that as much as 93 to 97 per cent of total expenditure on primary education is on salary and allowances of teachers. Hardly 3 to 7 per cent of resources are available for any deviation from the usual practice. Adequate resource availability and a policy commitment to educational development seem to be the basic preconditions for the development and prog-

ress of primary education. Kerala, Tamil Nadu, U.P. and Maharashtra were found to be the states with best progress of primary education; Jummu & Kashmir, Bihar and Orissa present an example of very slow progress.

What is true of higher education and primary education also seems to be true of secondary education. In fact, secondary education appears to be the weakest link in the educational system of the country, for elitist pressures ensure availability of finances for higher education and the constitutional directive ensures or at least announces the preparedness of the country to provide adequate resources to the development of primary education. No such commitment or pressure seems to be working effectively in the case of secondary education. A study by R.S. Yadav (1985), examining the priority accorded to secondary education *vis-a-vis* other sectors in the Five Year Plans in the context of Haryana, brings out some interesting facts relating to secondary education in India. Haryana being one of the economically advanced states does not appear to reflect development in the country as a whole so far as secondary education is concerned. Though the state has been spending a small percentage for its revenue budget for education as a whole, as compared to other sectors, the expenditure on secondary education in the state was found to have been increasing much faster than the state's net domestic product. It is interesting to note that the districts of the state which were spending more per capita on education in general were also spending more on secondary education. The state government was found to be providing increasingly larger assistance for recurring expenditures, such as teachers' and staff salaries. However, educational infrastructure, like school buildings and libraries, did not receive adequate support from the state grant. It is intriguing that, though expenditure on buildings from the non-recurring budget increased, that on libraries in the secondary schools has been declining. It was also found that financial resources were allocated largely to meet the need for quantitative expansion and very little attention was paid to qualitative improvement. In the case of non-recurring activities like developing the infrastructure, private endowment seems to have taken the initiative to finance it. However, the grant-in-aid system based on the deficit principle has a built-in disincentive for mobilization of resources from the private sector for meeting recurring needs.

FINANCING OF EDUCATION AND EQUITY-EFFICIENCY GOALS

The problems of educational finance are not restricted to the question of mobilization of adequate financial resources. As indicated earlier, they include the matter of the efficient utilization of resources, their proper allocation so as to improve the institutional efficiency, and also to realize the objective of equality. The best system of educational finance is the one which enables the educational structure to mobilize adequate resources, which has in-built flexibility with regard to availability of resources as and when required, which allows unconstrained autonomy in allocation of resources, mobilized (subject to these allocations not having unduly unfavourable effects from the point of view of equity), and where there is also, by and large, self-reliance and the minimum of interference from outside agencies. Self-reliance is steadily enhanced by raising internal efficiency in the use of resources and by reducing educational wastage and stagnation. A number of studies conducted recently have these themes as their focus.

A comparative study of educational financing in Haryana and Kerala and also in UP and Kerala (NIEPA, 1986) provides interesting insights on educational financing and the equity and equality. The studies conclude that free education will have a limited impact on equity and that a more effective compensatory finance measure is necessary for a breakthrough in inequity and inequality. Examining the pattern of educational financing in Kerala (with a higher level of equality in educational opportunities) and that in UP (with extreme inequalities), the NIEPA study points out that central assistance has also a role to play in achieving greater equality and that central assistance in the case of UP is far from satisfactory. The study also draws attention to the importance of regionalization of financial policies of states in matters of allotting grants and funds to districts. This district-specific approach, as opposed to the present methods of considering the state as a planning unit, actually needs to be further disaggregated so that the financial needs of the educational sector at the village and panchayat levels are also appropriately viewed.

Though the overall policies relating to educational finance may have their implications for equity, the effects will at best be indirect. It is from this point of view that a target-oriented approach to solving problems of resource poverty in the field of education becomes extremely crucial. The community-oriented and

individual-oriented approach is evident in the case of several subsidization schemes in education at different levels. There have been various schemes of providing scholarships to various socio-economically backward communities. A number of studies have been undertaken to evaluate the performance of these schemes (Rao and Mittal, 1981; Gogate, 1985; and NIEPA, 1986—three studies).

The study by Rao and Mittal evaluating the government of India's scheme of scholarships in approved residental secondary schools reaches a categorical conclusion about the low level of effectiveness of such schemes because of various socio-economic and institutional reasons and also laxity in implementation. Mostly, these scholarship schemes are introduced at the secondary and the higher educational levels. This seems to be one of the factors of their low level of effectiveness. Most of the socio-economically backward students may well have dropped out even at the primary stage owing to a number of socio-economic and financial reasons. This has been pointed in some of the studies (Gogate, 1985). A series of studies of post-matric scholarships for SC and ST students undertaken by NIEPA has reached similar conclusions regarding the causes for the failure of such schemes. The studies highlighted the inadequacy of the scholarship amount, delays in the payment of the scholarship, administrative hindrances in the effective implementation of the scheme, etc. It was also noticed that different welfare departments which managed the post-matric scholarships are not properly coordinated, resulting in laxity in the implementation of the scheme. Despite some of these difficulties, the post-matric scholarship scheme has proved to be quite useful for encouraging enrolment of SC and ST children in higher education. The usefulness of the scheme would increase significantly with interdepartmental coordination, proper monitoring, compilation of exhaustive data about the awardees and a follow-up study of the awardees throughout their educational and post-educational career.

If the internal resources of the country are inadequate for meeting both the efficiency goals and equity goals of the educational sector, dependence on an external source of finance becomes inevitable. However, external financing would have its implications for the prioritization of different schemes within the educational sector and it may also significantly influence the entire process of educational policy making. The Padmanabhan-Tilak study (NIEPA, 1986) shows that external aid was more available for higher education than for lower levels of education. It is intriguing that external aid was available in the past only to the elite sectors even in higher education itself. Even though the resource demands from the primary and secondary education are in actual practice overwhelming, the external aid has been found to be available largely for development of higher education and also for infrastructure and not so much for the development of manpower. The study indicates that the question of external financing of education needs to be thoroughly examined with scheme-wise analysis so that further insights about the intentions and the effects of external financing can be properly understood.

Generally, when there is a general resource crunch in the economy, its incidence is felt most in the educational sector. However, there is an improvement in the resource availability, the reverse attitude of making larger allocations to the educational sector does not seem to be working. This is largely because the gains from the educational sector are intangible. Even within the educational sector, the real gain, improvement in the educational standards of the people, which is intangible, gets relegated to the background in preference to the tangible aspects of construction of school buildings, procurement of equipment, etc.

Regarding the utilization of prevailing intrastructural facilities in educational institutions, the present position does not seem to be satisfactory. Library resources, school buildings, laboratory facilities, etc. are not fully and properly utilized in most cases. It is here that clear proof of whether or not the supply of facilities and the demand for facilities created are in equilibrium lies. Even in the context of the educationally advanced state of Kerala, library services were found to be not fully utilized in the case of higher educational institutions, the students' record of borrowing books from the library was not satisfactory, though it was much better in the case of teachers.

The pattern of expenditure and the efficiency-level of the school system are believed to be very closely related. In the case of schools of the Bangalore district, however, the expenditure-efficiency relationship was not clearly brought out (Manvikar, 1984). It is generally believed that highly paid staff are likely to be more efficient than low-paid staff, indicating that higher salary would lead to better organisational and personnel efficiency. Surprisingly, this belief also was not substantiated in the case of the Bangalore schools. The efficiency-level of the secondary schools was found to be determined more by the non-physical variables than the

physical ones. For the purpose of higher resource efficiency, institutional coordination and networking should be suggested as one of the useful measures as Manvikar (1984) has indicated. This particular conclusion seems to be valid in the case of schools in other states also, because a significant number of schools (55 per cent of them) had below optimum infrastructural facilities and inadequate sports and games facilities (35 per cent of them) (Arunajatai, 1979). In such a context, institutional networking seems to be an unavoidable measure.

Zero-base budgeting to bring about economy in the face of a severe resource crunch has all the potentialities for adversely affecting the educational sector to a significant extent. This does not imply that resources are properly utilized in the educational sector and that zero-base budgeting has no relevance at all for the educational sector. In the case of higher educational institutions in particular, the concept of zero-base budgeting can prove quite effective in releasing unused resources for the purpose of financing of the educational sector. Some of these questions have been examined by Panchamukhi (1987).

To what extent is resource-inefficiency in the educational sector due to the responses of the decision-makers on the supply side, and to what extent is it due to the responses of the decision-makers on the demand side? The educational institutions are the decision-makers on the supply-side. They are, by and large, responsible for allocating resources to different activities and schemes of the educational sector. Most often, these decisions are taken by the suppliers of education in anticipation of their proper utilization by the aspirants for education. However, resource-inefficiency also arises largely on account of the non-corresponding responses of the aspirants for education. Such responses may lead to wastage and stagnation at different levels. A number of studies with a focus on wastage and stagnation at different levels of education have focused their attention on some of the crucial causes for these inefficiency-oriented aspects.

The studies by Das (1979), Sharma (1982), and Sundar (1984) have examined some aspects of wastage in educational institutions. The conclusions of these studies are extremely revealing. Teacher-training does not seem to make a significant contribution towards reduction of wastage and stagnation so far as primary education is concerned. Only in the case of multiple-teacher schools was the training of teachers found not to have an impact. The wastage at primary level in Rajasthan was found to be higher for girls than for boys, higher for SC students than for others and higher for ST students than for others. Even though the students do not drop out, leading to wastage, there may still be improper utilization of their school resources if there is absenteeism. Student absenteeism was found to be more prevalent in government schools than in aided schools. By and large, regular attendance of the students was about one-third of registration, which obviously was not satisfactory. The various deterrents applied by the schools to control absenteeism were not found to be effective to a significant extent in the context of Delhi schools, as revealed in Sundar (1984).

MORE ABOUT INTERNAL AND EXTERNAL EFFICIENCY

The question of educational finance in particular and resources for the purpose of education in general, crucially depends upon how the existing physical and financial resources are utilized in the educational sector. The question of utilization of the resources in the sector in relation to its output is concerned with what is generally known as the internal efficiency of the educational sector. In this context, the concept of unit cost comes in very handy as a tool of analysis of internal efficiency.

The question of internal efficiency has long been considered by researchers in the context of wastage and stagnation in education. While wastage refers to student dropout before the course is completed and stagnation to continuation of the students beyond the stipulated course period, the question of internal efficiency has the wider connotation of utilization of physical and financial resources within the educational sector. The problems of wastage and stagnation thus highlight only one of the crucial dimensions of inefficiency in the system. A number of research studies have been conducted with a focus on such problems of internal efficiency of the educational sector at its different stages. Obviously, such studies on internal efficiency call for a micro approach. This is because a detailed factual profile of the resources used in each educational institution needs to be developed before any general statement about the internal efficiency of the entire educational sector can be made. Thus, the studies in this particular field have concentrated on region-specific and stage-specific approaches.

The question of unit cost in the context of different methods of education—formal, informal and nonformal—should also be interesting. Some studies in this field have considered this question also and these should ultimately help to develop insights about the cost-effectiveness of the educational sector.

Studies by Kumaran (1982) and Chalam (1981) examine the question of internal efficiency of higher education. Kumaran's study, for example, analyses the revenue and cost of education in Annamalai University during 1947-48 to 1978-79. Based upon an analysis of the university budget and employing simple statistical tools of regression analysis, the study tries to relate unit cost with age, enrolments, salary of the teaching staff, in ratio of the non-teacher cost to total cost. Interestingly the study notices that the administrative cost and miscellaneous cost of university education have fallen during the above mentioned period while the academic cost has increased. The unit costs in crucial faculties of humanities, agriculture, sciences, particularly marine biology, were found to be very high as compared to the unit cost for faculties of education, linguistics and languages. This is in line with the conclusions of other studies conducted in the context of other universities.

The study by Chalam in the context of higher education in Andhra Pradesh, using data for the period 1955-76, concluded that the expenditure on scholarships, buildings, etc. accounts for 42 per cent of the variation in indirect expenditure. The study also considered the question of external efficiency of higher education in the context of Andhra Pradesh. It revealed that rates of return for higher education had declined during 1959-60 to 1975-76 while those for primary and secondary education were found to be increasing. This is once again in line with the conclusion reached in some of the other studies.

Two studies were reported in relation to the internal efficiency of secondary school education in a recent period. The study by Manvikar (1983) tried to compare the expenditure pattern of different types of secondary schools in Bangalore district, both rural and urban, schools with a view to finding out the relationship of factors like strength, age of the school, teacher's age, qualification and experience, on the one hand, with the expenditure and school efficiency, on the other. As could be expected, the secondary schools in urban areas were found to be more efficient than those in the rural areas. Though the author has tried to study the statistical relationship of the variables mentioned above, it should be noted that the expenditure variables explain only 21 to 29 per cent of variation in the total efficiency of the secondary schools. This seems to have a significant policy implication in the sense that, for the purpose of internal efficiency in secondary schools, though the amount spent on education may be necessary, it is not a sufficient condition for ensuring internal efficiency. Internal efficiency is related more closely with variables other than the expenditure variables. This obviously means that, for better utilization of resources, the precondition is not, largely, the availability of resources or not necessarily a different pattern of expenditure. The crucial determinant seems to be better management and a higher level of commitment of the staff to the functional goals stipulated for them.

Another study on some aspects of internal efficiency having interesting policy implications is the one by Kumar (1968) done for the 'backward' state of Rajasthan. The study is based upon the data collected from 71 schools. It found that the cost per pupil was in direct proportion to the teacher-pupil ratio. Most of the schools which had high unit costs, and hence were uneconomical, were located in sparsely populated habitations, indicating that schools should be located in densely populated habitations if costs alone are considered. The feeder population which supplies clientele for secondary schools thus become a crucial determinant of the internal efficiency. When the country is aiming at spreading educational facilities from one end to the other, irrespective of habitations, where these facilities have to be provided, this conclusion is quite significant for developing an understanding of the quantum of resources required for the purpose. It should also be mentioned that this study related to a distant past so far as the numbers are concerned. The basic conclusions of the study, however, seem to be still valid.

Two more studies on unit cost of primary education were brought to our notice (Dutt, 1971, and Dandavate, 1986). Dutt's study considered the question of unit cost at the primary educational stage in Haryana. It was based on data drawn from only three primary schools within a radius of 8 km. It is more in the nature of a case study rather than a study providing a basis for generalization. The study by Dandavate, on the other hand, collected data on as many as 201 primary schools in Greater Bombay during the period 1962-80. Its main objectives were to examine whether the unit cost (better still, expenditure per pupil) has any relation with the period of establishment of the school. The study concluded that the size of the school, teachers' salaries per pupil and maintenance expenditure acted as major determinants of primary-school cost.

There were three studies on the analysis of cost of different methods of teaching and education (Singh, 1984, Pandey, 1980 and Ram, 1984). It was found that economies of large-scale operate in the case of teaching aids as well (Singh). 'High cost' of AV media was no longer costly when its coverage was extended to all schools of the country and at all stages of school education. Similarly, conventional teaching aids like charts were no longer 'low cost' when extended to all schools. The study examined a number of factors responsible for this finding which has significant implications for educational television. Whether or not adoption of educational television as a teaching aid should be based upon the cost consideration is an important question. When the formal system is proving to be increasingly inadequate to provide facilities for growing numbers of aspirants for education at different stages, it becomes imperative to search for alternative structures within the educational system. Externalization of education is one such method adopted as an alternative to the present procedures and processes in the formal educational system. Correspondence education as an alternative strategy has been introduced in India largely at the higher educational levels. The two studies which were brought to our notice (Pandey, 1980, and Ram, 1984) consider the costing, financing and other economic factors of correspondence education.

The study by Pandey attempts to examine the effectiveness of correspondence education in Indian universities, making use of data from seven universities, viz., Meerut, Delhi, Punjabi, Bombay, Sri Venkateshwara, and Madurai Kamraj universities. Interestingly, correspondence education has proved to be highly self-supporting. On the whole, correspondence education was also found to be cost-effective, for the average cost per student in the case of correspondence education was found to be lower than that for regular courses. Interestingly, the academic performance of correspondence education was found to be better than that of private education. The attitudes of students and teachers towards correspondence education was found to be quite favourable. Interestingly, correspondence education was not favoured by women. Also, unemployed students were not favourable disposed towards this method of education. This, indeed, is a surprising conclusion. Female students, for socio-cultural reasons, have the problem of finding time to devote to education. Similarly, unemployed students, who might be expected to prefer correspondence education do not favour it because they have to spend long hours in search of jobs. The conclusions of this study appear to be somewhat biased in favour of the correspondence education conducted by Meerut University.

The question of the external efficiency of allocation of resources for education has received the attention of a large number of researchers since 1960s when a number of studies followed the publication of the contributions of T. W. Schultz. Two such studies (Madi, 1982, and Debi, 1983) were brought to our notice. By and large, a number of socio-economic variables, other than education, were found to be the major explanatory factors so far as the earning advantages of an educated people are concerned. Rates of return for higher education in the context of Karnataka (Madi) and Orissa (Debi) were found to be fairly high with the rates being higher for professional education than for general education. Though one might like to improve upon the general methodology of calculating the rate of return on education, the general conclusions that these studies on external efficiency of higher education have reached seem to be replete with policy implications. The general assumption that the researchers in this field make, that education is an important determinant of earning-capacity needs to be reconsidered in the context of the conclusions in such studies which have highlighted the role of a number of socio-economic factors other than education explaining variations in earnings. There is the heroic question, viz.: to what extent can earnings be considered an index of the value of education? It would be useful if, as a guide to policy making in education, the heroic assumptions made in such research studies were reconsidered.

PLANNING AND MANAGEMENT QUESTIONS

The consideration of education-economy-society interlinkages, and issues of internal efficiency and finance, suggests that proper planning and management of education, on the one hand, and the economy and society, on the other, may enable us to realize more fully the potential of education as an agent of social change. In what follows, we briefly consider the question of management and planning of education. The management and planning of the economy and the society are outside the scope of this review.

Questions of planning and management can be viewed from micro and macro points of view. While micro perspectives about the functioning of individual educational institutions provide insights into various

economic aspects of educational development, the planning of education in an integrated fashion, so as to be consistent with every aspect of socio-economic development of the country, requires a macro perspective. For obvious reasons, this aggregative or macro perspective should be developed on the basis of micro perspectives themselves. Educational planning, which is one of the crucial aspects of the economics of education, would thus derive its strength from the micro-economic and macro-economic methodologies.

In this background, it becomes extremely useful to develop an analysis of the determinants of supply of and demand for education. What are the socio-economic determinants of educational demand? Can these demands be properly taken account of in the overall socio-economic planning of the country? What are the implications of this demand for the objectives if inter-gender, inter-regional and inter-community equity and equality? Thus educational demand is not a homogenous phenomenon. Its different connotations depend upon the type of education, the regions where it is required, the cost of meeting the demand, etc. Therefore, educational demand needs to be further analysed, taking into account all these aspects. While the demand for education comes under the significant influence of past socio-economic developments in the country, in the subsequent period, it may itself have its influences on the nature of socio-economic development. From this point of view, the influence of educational demand on the dimensions of development also become crucial.

Educational planning is not a mechanical exercise of putting screws in the holes and tightening them. This is because the human element is involved in the entire process of educational planning. Attitudes and aptitudes of aspirants for education, capacities and competencies of educated individuals, interests and involvement of educated employees, amount of satisfaction derived from the jobs which are manned by educated individuals, etc., are some of the basic variables which need to be considered in the exercise of educational planning. To what extent can policy variables like wages and salaries, restrictions and control, transfers and placements, influence the basic variables is another dimension which deserves attention of analysts and policy makers. In recent years, researchers in the field of education in general and economists of education in particular have been taking interest in some of these questions. We have already reviewed above, under the heading, 'Interdependencies between Economy and Education, some of the studies which have a bearing on only some of these aspects. The general impression one gets from a review of research work in this field is that educational planning is not seriously attempted in India. Haphazardness in educational expansion, indifference to the question of course-content, inadequate resource availability, etc,. illustrate this. For obvious reasons, it may also be difficult to undertake rigorous planning of education in India. Resource allocation exercises in relation to education (which are generally residuary in nature) cannot in themselves be considered as planning without an effective monitoring system coupled with a reward/punishment mechanism.

Possibly, for the same reason, research studies in this field do not seem to have made an impact. Even with regard to institutional planning and management, the research efforts are only few in number, though this area provides much scope for innovative approaches.

Management of the institutions in particular, and the educational sector in general, have increasingly become a specialized job, with the application of modern techniques of management to the various decision making situations. Management techniques in the educational sector have some unique features which are not shared by economic organizations such as companies and the firms. In the case of the educational sector, the problem is largely one of human resource management in the face of limited physical capital resources. Education is highly human-capital-intensive activity. Though ideas about management techniques developed in the context of educational institutions abroad cannot be imported in toto, it is still useful to examine the applicability of some of these ideas to Third World countries where serious attempts at restructuring educational systems are being made. A comparative analysis of university administration in India and the USA or other developed countries could bring out possibilities of using some of these innovations in India (Mehendiratha, 1982). A micro approach to the administration of educational institutions at different levels should provide further insights into the crucial variables in educational management. Majumdar (1979) feels that some of the oldest universities in India have developed internal contradictions and hence their future is not very bright. This was the particularly painful conclusion drawn in the context of Calcutta University. A study in the context of a regional university (Sinha, 1979) also does not have very encouraging observations to make about university administration. In most of these universities there is no participatory management. This has resulted in low levels of efficiency.

While this is the situation in the universities, the situation of the apex body charged with university development in India, the UGC is no less discouraging. A study of the organization and management of the UGC (Sharma, 1981) brings out some of the difficulties in the case of its functionings The absence of a networking of the various apex institutions at higher education level such as the UGC, ICSSR, ICHR, ICPR, NIEPA, CSIR, and CAPART, is largely responsible for duplication of effort and also internal contradictions in the educational sector.

Studies on organizational aspects of schools are extremely important because, while at the higher educational levels there are serious attempts to employ some professional management approaches, there seems to be an attitude of indifference so far as the management of schools is concerned. The role of the head of the school, the organizational climate in the school, management behaviour, etc. should be some of the crucial variables for determining the effectiveness of the school as an institution (Srivastava, 1985; Baraiya, 1985).

On the whole, the issues in planning and management of education do not seem to have found much favour with researchers in the field of economics of education.

CONCLUDING OBSERVATIONS

From the foregoing review of studies relating to interlinkages between education on the one hand and economy and the society on the other, one gets the impression that the studies conducted so far have followed the well-charted path, with more or less similar methodology, similar focus and emphasis, except for a few studies which have an innovative approach and unconventional methodology and focus. Most of the studies appeared to be stereotyped and monotonous. Also, excepting a few studies, the investigations adopted an aggregative approach, with national, regional or community coverage. While such a macro approach may have its advantages, it must be emphasized that for developing insights into the relationships between education on the one hand and economy and society on the other, a more disaggregated or micro approach is necessary. There is obviously a difficulty in this approach concerning drawing generalizations and replicable prescriptions. However, a carefully compiled set of conclusions from different micro-studies undertaken in different contexts and settings should provide a more dependable and useful basis for understanding problem of inter-linkages in economics of education than aggravative studies. It is the compilations which will help in providing a firm basis for policy formulations also.

In the above review, we have tried deliberately to include studies undertaken by scholars other than economists. We have tried also to consider the linkages between education and economy. The main purpose of including such studies in the review was to see to what extent an interdisciplinary approach could be and has been adopted in studying these interlinkages. Obviously, education in general and economics of education in particular should be studied with an interdisciplinary perspective, though the current state of research in education in general and economics of education in particular is found to be largely unidisciplinary in nature. The studies of socio-economic factors in relation to academic achievements, etc. attempted by non-economists can be considered to be making a good beginning, though one may not be convinced about the depth and coverage of the treatment of the issues in these studies.

Another point which deserves our notice is that most of the studies are statistics-oriented, without displaying much innovative thinking in developing a conceptual framework for compiling the statistics. Hardly any truly conceptual studies were brought to our notice. There is danger of the discipline of education in general and economics of education in particular getting impoverished with an increasing neglect of the conceptual aspects of the problem. The number of conceptual studies undertaken can be considered as an index of the potential for development of the discipline in the future. In this light, it appears that the discipline of economics of education does not seem to have sunk firm roots in the minds of researchers and also that the prospects for its development in future do not seem to be very bright.

Occasionally, there have been attempts to undertake action research in the field of education in general. However, in the field of economics of education there is hardly any action research programme. The question of reducing the cost of education, increasing the resources for education, making education more effective for economic advantage without inhibiting the non-economic advantages, etc. can be useful themes for action research. In fact, the micro approach which we have emphasized could get strengthened with action research programmes in the field of economics of education.

On the whole, the studies in the field of economics of education reviewed here leave one with mixed

feelings—optimism because a large number of studies have been undertaken in the field in recent years; disappointment because there is a low degree of innovativeness in most of them. It is time that researchers with an interest in this field quickly developed their own diagnosis of the trends in the developement of the discipline so that effective remedial measures in their research endeavours are initiated to rejuvenate the discipline and rouse interest in it among scholars in general and the policy makers. The stipulation of a research agenda for the future would be self-defeating in this background, because any form of stipulation would introduce rigidity, which is fatal to growth. What one can at best do is simply to direct society's attention to the malady rather than suggesting a remedy. That is the attempt that has been made in this review.

ABSTRACTS: 285—318

285. AHER, H., *Critical Analysis of University Finances in Maharashtra*, Ph.D. Edu., Nag. U., 1986

The study was an attempt to investigate the causes underlying poor financial conditions of non-agricultural universities in Maharashtra and to examine whether the grants received from different sources were adequate and whether the expenditure made was proper or otherwise. Some of the specific objectives were, (i) to study the financial administration of the universities of the state, (ii) to analyse their financial working in relation to income from various sources, including fees, grants from state and central governments, endowments, and (iii) to analyse the expenditure pattern.

The study was related to six universities of the state, viz., Bombay University, Nagpur University, Poona University, SNDT University, Marathwada University and Shivaji University. The period covered for the study was the 20 years, 1960–61 to 1980–81. The historical method was followed. The primary sources of data were official statistical reports, government publications, annual reports of the universities. The secondary sources were reports of various commissions, interviews with university authorities and government officers.

Some of the major conclusions were: 1. The Maharashtra State Government has been paying block grants to the universities of Bombay, Nagpur, Poona and the SNDT university with 6 per cent increase over the previous grant each year to meet the maintenance expenditure. From the year 1962–63 onwards, this growth was reduced from 6 to 3 per cent. The rate of 6 per cent was restored from the financial year 1976–77. It was interesting that for Maharashtra's universities there were two types of grants-in-aid formula. Marathwada University, Aurangabad, and Shivaji University, Kolhapur, were paid maintenance grants on 100 per cent deficit basis. 2. In 1980–81, the total recurring annual income of the Maharashtra universities was Rs 17.52 crore. Bombay University was at the top and Poona University at the bottom of the income scale. The main sources of income of the universities of Maharashtra were government grants followed by fees, examination fees, hostel fees, library fees, publications, printing, endowments and miscellaneous. 3. Recurring annual expenditure of universities in Maharashtra varied very widely in the year 1980–81. The total recurring expenditure of the universities of Maharashtra was Rs 19.30 crore. The expenditure of Bombay University was the highest at Rs 5.25 crore, the lowest being that of Shivaji University, Rs 2.97 crore. 4. Unit cost per student on the items of non-teaching staff, teaching staff, teaching departments, equipment, books and journals was calculated. Unit cost per student on non-teaching staff was the highest at Rs 5083 in Nagpur University in the year 1980–81 and the lowest was at Rs 2,388 in Poona University. Unit cost on teaching was highest at Rs 4557 in Poona University and the lowest was Rs 1472 in 1980–81. The average unit cost of equipment and furniture in the year 1980–81 was Rs 596.90, which was the highest among the universities of Maharashtra and the lowest was at Rs 50.56 in Marathwada University. Unit cost of books and journals was highest in the year 1980–81 at Rs 780 in SNDT University, Bombay, and lowest in the Nagpur University at Rs 17.89 in 1980–81. 5. The major financial problems faced by the universities in Maharashtra were, (a) stringency of funds, (b) wasteful expenditure, (c) the state government's policies and (d) problems of financial administration.

286. AKHTAR, M.A., *Education and Manpower Planning with special reference to India*, Ph.D. Eco., Bih. U., 1983

The main aim of the study was to hightlight the various aspects related to education and manpower planning with special reference to India.

Available documents, literature, etc. were critically studied. Education and human resource development, responsiveness of the educational system to economic needs, higher education and economic needs, measurement of cost of education, measurement of productivity and efficiency of education, manpower requirements and methods of manpower planning were studied and critically discussed with special emphasis on concepts, general principles, experience in India, and the work done and the problems faced during the period of planning.

The study revealed how education increased the rate of human capital formation and stimulated economic growth. Higher education should be regarded as an investment in human resources and efficiency in education is determined in terms of rate of return on the resource invested. The study showed how the beginning in this regard was made in the First Five Year Plan. The work was carried on haphazardly in the Second Five Year Plan and efforts improved in the Third Five Year Plan. A coordi-

nated approach could be adopted in the Fourth Five Year Plan.

The significant educational implication is that the study is helpful in evolving a proper strategy for manpower planning in relation to education in India.

287. CHALAM, K.S., *A Study of Finances, Productivity and Unit Costs of Higher Education in Andhra Pradesh*, Ph.D. Eco., And. U., 1981

The objectives of the study were (i) to find out the unit cost of students studying in institutions engaged in professional, technical and general education, and (ii) to estimate the internal productivity of higher education.

The data for the study were collected from the enrolment figures (from 1955 to 1976) obtained from the planning department of the Government of Andhra Pradesh. The number of qualified students was estimated on the basis of percentage of passes given for different degrees at the state level in the Statistical Abstracts of Andhra Pradesh. The economic weights were assigned on the basis of the ratio of average life-time earnings. The ratio of relative earnings for the year 1955–56 was applied for the year 1956. Similarly, the ratios for 1967 and 1976 were applied from the years 1966–67 and 1975–76 respectively. The unit cost was measured per student on the basis of food, maintenance, transport, academic books, fees, pre-admission costs, etc. The output was measured on the basis of length of schooling, nature of studies and ratio of average earnings of all graduates taken together.

Findings of the study were: 1. Growth of enrolment in general education and professional higher education indicated that the growth of all categories, except graduates in general education, had declined in the second decade as compared with the first. The proportion of the status pursuing postgraduate courses in the professional courses had increased much faster than in general education during the period 1956–57 to 1975–76. 2. The enrolment had influenced the number of teachers employed in the colleges and universities of the state. 3. Educational expenditure in the state had grown much faster than the SDP during the last two decades. The expenditure on higher education ranked in all levels of education sector during the period of study. 4. The proportion of SDP spent on education and higher education was less than 3 per cent and 1 per cent respectively in 1975–76. For the country as a whole it was 3.5 per cent of GNP. 5. Among the different items of direct expenditure, salaries of teachers in general and professional streams accounted for 63.0 and 53.0 per cent of the total expenditure on higher education respectively in 1975–76. 6. Out of the total expenditure on higher education, only less than one third of the amount was devoted to professional education. 7. Regression analysis showed that the expenditure on scholarships, buildings, etc. accounted for 42 per cent of the variation in the indirect expenditure while it accounted for only 28 per cent of variation at constant prices. The elasticity of total expenditure with respect to buildings and scholarships and also to the total indirect expenditure on higher education was less than one. 8. Finances for higher education continued to come from three main sources, namely, the state and central government and their agencies, local bodies and private contributions through fees, gifts, etc. Private endowments which had a dominant role in collegiate education two decades ago, has now declined and contributed less than one fourth of the finances. 9. The unit institutional costs of colleges of Visakhapatnam indicated that the unit costs were less in the government colleges as compared with private colleges. The government cost per student at institutional level was more in government colleges where hostel facilities for weaker sections were provided. Out of the government cost, a maximum amount was devoted to operating cost of the institution. 10. The private cost of postgraduate and professional courses was more than that of the undergraduate courses in degree colleges. The private cost of MBBS students was found to be higher than that of any other course. 11. The private cost of scheduled caste students indicated that 60 to 67 per cent of their total expenditure was on food in the degree colleges and 49 to 55 per cent on this item in the university. The average private expenditure of the scheduled caste students was lower than that of backward class and all other students and they also spent comparatively less on books and stationery. 12. The state met less than 50 per cent of the educational expenditure on scheduled caste students and less than 40 per cent in the case of backward class students. 13. The total committed government expenditure was found to be less. 14. The government had been taking the major responsibility for funding higher education system in the state. 15. The external productivity of different levels of education in terms of rate of return and earning differentials revealed that rates of return of higher education had decreased during the period 1959–60 to 1975–76, while an increasing trend had been observed in the case of primary and secondary education. 16. The

devolution of grants-in-aid, scholarship schemes, rate of fees for higher education, admission policy, etc., of the government of Andhra Pradesh were not based on rationally devised criteria but on a policy of ad hocism.

288. DANDAVATE, P., *Cost of Primary Education in Greater Bombay, 1960-80, at School Level*, Ph.D. Edu., Bom. U., 1986

The objectives of the study were (i) to observe the cost of primary education in the case of private schools as well as municipal schools established prior to and after 1960–61 till 1980, (ii) to study the trend of total expenditure, i.e. cost of primary education during 1960–80, and (iii) to study whether the period of establishment had any bearing on the total expenditure per pupil.

The sample of the study included 32 aided schools established prior to 1960–61, one aided school established after 1960–61, nine unaided schools established prior to 1960–61, 27 unaided schools after 1960–61, 61 municipal schools established prior to 1960–61 and 38 municipal schools established after 1960–61 for objective (i); 13 private schools and 20 municipal schools, 334 students of private schools and 368 students of municipal schools were selected for objectives (ii) and (iii). Information schedules and pro formas were used for data collection. Data were collected mostly from the official records. Analysis was done by descriptive statistical techniques.

The main findings of the study were: 1. The school population increased from the base year in all schools other than Urdu schools established prior to 1960–61. 2. This trend was marked in the case of aided as well as unaided institutions. 3. Among aided and unaided schools established prior to 1960–61, the overall trend showed that the pupil–teacher ratio increased with fluctuations in schools with different media of instruction. 4. Among aided, unaided, lower-primary and upper-primary schools established prior to and after 1960–61 the overall trend in all languages showed that teachers' salaries per pupil increased over the 20-year period under study. 5. Staff salaries per pupil dominated the unit cost in all types of schools. 6. Teachers' salaries per pupil dominated the unit cost. 7. Among aided and unaided schools, the proportion of school maintenance expenditure per pupil to unit cost had come down, while in the case of municipal schools it had increased over the period under study. 8. The proportion of unit cost on auxiliary facilities was less than one per cent. 9. In the case of aided and unaided schools it was spent on medical help only, whereas in the case of municipal schools expenditure on this head was incurred on books, medical help, school feeding, etc. 10. At constant prices, teachers salary per pupil as well as unit cost increased in all the schools over the period of 20 years under study. 11. Maintenance expenditure influenced the unit cost to a large extent. 12. The proportion of expenditure on fees per child to total expenditure per child was highest among all components in all schools. 13. Highest per child expenditure was Rs 96 per month in case of English medium schools. 14. The cost of education on the part of parents of private schools was higher than that of municipal schools because of no fees, no transport charges, less expenditure on books in municipal schools. 15. Children studying either in private or in municipal schools did not forego their learning significantly. 16. The size of the school, teachers' salaries per pupil and maintenance expenditure acted as major determinants of primary school costs.

289. DEBI, S., *Cost-benefit Analysis of Higher Education: A Case Study of Orissa*, Ph.D. Eco., Utkal U., 1983

The main objectives of the study were (i) to analyse the direct and indirect costs and benefits of higher education by different types and levels, (ii) to examine the most profitable level and type of higher education, both from the private and social points of view, and (iii) to examine whether investment in education was more profitable than other investments.

The study included a sample of 511 employees having different levels and types of higher educational qualifications. They belonged to Bhubaneswar city. Data were collected from the sample respondents as well as from published and unpublished materials related to institutional costs, unemployment rate, etc. The rates of return to different types and levels of higher education were calculated through the internal rate of return formula. Also, the net present values of different levels and types of higher education were calculated applying a discount rate of eight and ten per cent.

The main findings of the study were: 1. The cost of higher education in Orissa was relatively low in comparison with that in other states of the country, excepting the professional graduate courses. 2. The earning

structure of educated persons in Orissa varied from sector to sector. 3. The age–earnings profiles (social and private) also had the general characteristics of 'well-behaved' profiles, with few exceptions. 4. The effect of educated people in Orissa increased as one moved upward to higher levels of education. 5. The effect of education on earnings was 23.25 per cent for general undergraduates, while the corresponding figures for general graduates and for general postgraduates were 30.43 and 35.69 per cent respectively, 6. The rates of return to professional undergraduates were highest among all other levels of higher education. 7. The unadjusted social rate of return to professional undergraduate was 26.25 per cent and the private rate of return was 32.95 per cent. 8. The rates of return to general graduates was highest among all other levels and types of education. 9. The adjusted private rate of return to general graduates was 11.50 per cent and the social return was 9.52 per cent. 10. The rates of return decreased as people moved upward to higher levels of higher education. 11. The private rates of return were always higher than the social rates of return. 12. The rates of return to professional graduates were lower than the rates of return to general graduates, general undergraduates and general postgraduates. 13. The private rates of return to all levels and types of higher education were higher than the alternative rates. 14. The adjusted rates of return were very low due to the pronounced influence of other socio-economic variables on earnings of individuals. 15. Investment in different levels and types of education were not socially profitable since the estimated social rates of return were lower than the alternative rates. 16. The rates of return estimated for Orissa were higher than the rates of return for other states as calculated in other studies.

290. DUTT, N., *A Study in Unit Cost at Primary Education Stage in Haryana*, SIE, Haryana, 1971

The major aim was to estimate the unit cost of education at the primary stage in Haryana. Three primary schools within a radius of eight km from Karnal were selected for the study. One of them was a good school, the second was an average school and the third was a poor school. The total number of students in the three schools were 35 boys and 131 girls—166 in all. The data were collected for a period of five years, from 1965–66 to 1969–70. The data pertained to institutional cost (A) —capital cost on land, building, boundary wall, well or hand-pump, residential quarters for teachers and other personnel institutional cost; (B)—equipment cost, cost of library books, playing material, audio-visual aids, blackboards, *patri, taklies*, etc; institutional cost; (C)—non-divisible recurring cost on pension, allowances, etc., electricity charges, part-time servant charges, repairs, postage, stationery, examinations, social functions, furniture, etc. institutional cost; (D)—divisible recurring cost on scholarship, freeship, etc. Expenditure incurred on pay and allowances of the staff was the next expenditure head. Student cost on tuition fee, funds, textbooks, stationery, etc. and mid-day meal formed a separate category of expenditure. Opportunity cost or income forgone by students while they studied was calculated as equivalent to the amount they would have earned had they not attended school.

The main findings were: 1. The capital cost came to Rs 365.00 per school per year or Rs 2.20 per student per year. 2. The equipment cost came to Rs 97.00 per school per year or Rs 0.60 per student per year. 3. The non-divisible recurring cost was Rs 13971.00 per school per year or Rs 84.15 per student per year. 4. The divisible recurring cost was Rs 48.00 per school per year or Rs 0.30 per student per year. 5. The student cost was Rs 16.10 per student per year. 6. The opportunity cost was Rs 140.60 per student per year. 7. Other cost (expenditure on dresses, shoes, etc.) was Rs 11.00 per student per year. 8. The total visible expenditure per student per year was approximately Rs 255. The invisible expenditure was Rs 21 per year per student. 9. The total of visible and invisible expenditure per student per year was Rs 276.

291. GOEL, M.M., *Investment in Physically Handicapped Persons in Haryana*, Ph.D. Eco., Kur. U., 1986

The objectives of the study were (i) to study the nature and number of physically handicapped persons in the state of Haryana, (ii) to study the nature and volume of physically handicapped manpower in the state, (iii) to analyse the working of the special educational and vocational training institutions quantitatively and qualitatively, (iv) to calculate rate of return on investment in physically handicapped persons (PHP), and to see whether investment on PHP was justified on economic grounds, (v) to ascertain the causes of physical handicaps, namely blindness, deafness and orthopaedic nandicaps, and (vi) to evaluate the programmes and institu-

tions for the prevention and cure of the physical handicaps.

The population for the study consisted of 20 institutions concerned with education, vocational training, health and employment of PHP in the state. This included 12 institutions for the blind, three for the deaf and two for the orthopaedically handicapped, one special employment exchange for all three categories, and two centres for the physically handicapped run by the Red Cross Society. In the study, all the institutions were covered except six institutions for the blind which were not functioning properly. From each of these institutions a sample of three staff members was randomly selected. The sample of subjects (physically handicapped persons) consisted of all the ex-beneficiaries whose names and addresses were available with the institutions. In this way, the sample consisted of 200 physically handicapped, including 77 blind, 53 deaf and 70 orthopaedically handicapped and 42 staff members. The ex-beneficiaries with incomplete training were treated as untrained. The data were collected from the records as well as with the help of interview schedules. The records were those as were maintained by institutions and the Directorate of Health, Education and Employment. The data so collected were analysed with the help of correlation, percentage and regression analysis. In order to study the effects of factors of unit cost of educational and vocational training for the physically handicapped, the age of the institution, enrolement, average pay of the teachers, ratio of non-teacher cost to total unit cost, and regression analysis were used.

The findings of the study were: 1. The investment in the physically handicapped in Haryana by the Social Welfare Department increased at the annual compound growth rate of 24.1 per cent. 2. The underutilization of budgetary provisions for the welfare of the physically handicapped ranged from 45.49 per cent in 1967-68 to 1.24 per cent in 1979-80. 3. The number of voluntary organizations working for the physically handicapped increased at an annual compound growth rate of 6.3 per cent. The investment (measured in terms of grants-in-aid) per voluntary organization for the physically handicapped had increased. 4. By the end of 1984, 20 institutions were functioning in the state, whereas there were only five institutions for physically handicapped when Haryana came into being in 1966. 5. Of the educational and vocational training institutions, 87.5 per cent had been located in urban areas. All the institutions were providing vocational training in different trades, besides formal education with special techniques. 6. Of the total income of the institutions, 65 per cent came from government grants. 7. The major problems of institutions as perceived by the institutional heads included financial problems of inadequate and untimely government grants, difficulties in maintenance of quality of food due to rise in prices, lack of accommodation, scarcity of the professionally trained staff, and underutilization of capacity due to lack of publicity. 8. The teachers were provided with material for special education and vocational training. The teachers reported problems like lack of proper planning and training in different trades, lack of interest in the repetitive work by the blind trainees, orthodox trades, the trades not being suited to local needs, limited training facilities, shortage of raw material required for vocational training, lack of proper environment, lack of supervision, unrecognized diplomas and certificates, and job insecurity among teachers. 9. The growth rate of the scholarship scheme for the physically handicapped revealed that educational facilities for the physically handicapped had seen a steady progress and the average amount of scholarship per student had increased. 10. Social rates of return on investment on the physically handicapped, under alternative assumptions about the contribution of vocational training to the life-time-net-benefit-stream, varied between 10.67 and 30.58 per cent in the case of one-year and between 5.29 and 17.46 per cent in the case of the two-year training courses. 11. Prevention and cure of blindness in Haryana was being pursued under the national programme of prevention of visual impairment and control of blindness. The Haryana Welfare Society for the Deaf was the only organization providing facilities for the prevention and cure of the deafness. For the prevention and cure of orthopaedic handicaped in Haryana, intensive care and medical intervention had been provided by the Saket Institute of Orthopaedics and Rehabilitation. 12. The average per capita expenditure on the placement of the physically handicapped was Rs 279.19 whereas the overall average expenditure was Rs 152.39 per placement. 13. The rate of growth for placement of different categories of the physically handicapped was lower than that of registration. 14. The correlation of placement probability with time was significant in case of the physically handicapped. However, the correlation of the time and placement probability was the highest in the case of the blind. 15. A study of relative movements of inflow of job-seekers through registration and placements also revealed a similar picture. The correlation of 'relative traffic intensity' with time was significant in

the case of the orthopaedically handicapped and the blind.

The study has its implications for teachers, parents, social organizations and the government. All these individuals and institutions should understand that investment in physically handicapped persons has the basic aim of maximization of the use of facilities provided, or the output turned out for the given amount of expenditure, or the minimization of the amount of expenditure required for giving a set of facilities to convert the handicapped into working human capital or producing a pre-determined output.

*292. GUPTA, M.L., *Indian Economy and Higher Education with reference to Correspondence Education, Institute of Correspondence Studies*, Raj. U., 1985

The objectives of the study were (i) to review the economic development of India in general and the state of Rajasthan in particular to determine the emerging economic need, (ii) to review the planning and development of higher education in general and correspondence education in particular after independence, and (iii) to judge the significance of correspondence education system on the basis of the economic need.

Data were collected mostly through document surveys. The analysis techniques used in the study were rate of growth analysis, measurement of input-output ratio, measurement of input index, etc. Data were collected for the years 1972-73 to 1976-77.

The findings of the study were: 1. Though the Indian economy had developed since independence, its rate of growth had been slow. 2. The emerging need of the Indian economy was to lay emphasis on development of the rural areas by laying special emphasis on developing agriculture and small-scale and cottage industries. 3. Developing agriculture and agro-based industries in villages in the small-scale and cottage sector was the emerging need of the economy of Rajasthan. 4. The origin and development of correspondence education in Rajasthan had not taken into account the economic needs of the state. It had simply confined itself to preparing figures of enrolment for following the 'social demand approach'. 5. The courses did not fit in the structure of economy because of their general nature and lack of contribution to job-oriented studies. 6. The correspondence courses increased the number of unemployed graduates, thereby aggravating the severe problem of educated unemployed. 7. Though, on cost comparisons, the correspondence courses were economical (with reference to the regular courses), on the basis of academic performance, they were not so. The study of trends of productivity measurement also supported this view. 8. the courses needed to be properly planned, giving more emphasis to the needs of rural areas, manpower-requirement approaches, appropriate coordination of courses with the regular courses, and use of new technologies of education.

293. JENA, S.L., *University Finances: A Case Study of the Maharaja Sayajirao University of Baroda*, Ph.D. Edu., MSU., 1983

The major objectives of the study were (i) to examine the sources of revenue for the university, (ii) to study the operating expenditure of the university, and (iii) to examine possibilities of augmenting the resources of the university in terms of conventional sources and supplemental sources.

Of the 29 years of the university's existence (1949–50 to 1979–80), a period of ten years (1970–80) was selected for detailed and depth examination. Data were collected with the help of pro-forma and interview schedules prepared by the researcher. The sources of data were official records, university administrative staff and experts in the economics of education. Descriptive statistical techniques were used for analysis of data.

The major findings of the study were: 1. The average share of state grants, students' fees and receipts from the university's activities constituted around 58, 32 and 10 per cent respectively of the university's income. 2. A trend of increasing reliance on grants from the state government was seen as the internal receipts decreased from about 50 per cent in 1970–71 to 27 per cent in 1978-79. 3. The grant-in-aid system was evolved through a process of confrontation, collision and persistent persuasion, which was in dissonance with the parameters of adequacy, efficiency, equity, elasticity and specificity. 4. The residual in the total income, which represented the university's own contribution of around ten per cent was experiencing a downward drift. This was because of the non-progressive attitude of the university in mobilizing and boosting up its own internal resources through an efficient management of its own activities. 5. The proportionate share of different heads of expenditure were faculties and institutions

(71 per cent), students' welfare (10 per cent), and examination (3 per cent). 6. The personnel costs under the heads of faculties and institutions consisted of 83 per cent. There was an increasing trend of this cost over the years. 7. There seemed to prevail an inequitous allocation of resources among various faculties and institutions of the university. 8. There seemed to be a lack of correspondence between costs and fees in all the faculties and institutions. 9. Contrary to the expectation that activities such as halls of residence, examinations and auxiliary services would be self-financed, their operational inefficiency, largely due to the university, had made them dependant on public subsidy. 10. Though the expenditure on students' welfare increased, the expenditure on the university library did not receive any priority attention. 11. The university has had deficit budgets throughout its existence. 12. The factors contributing to the recurrent incidence of deficits were found to be, (i) inadequacy of state grants, (ii) the mechanics of fixation of grants, (iii) inordinate delay in the fixation and release of grants, (iv) conflicting perceptions of the state government and the university on usual expenditures, and (v) the high income elasticity of expenditure. 13. The per capita expenditure of the university ascended the scale from Rs 1,251 in 1970-71 to Rs 2,855 in 1978-79. Classroom-based courses were the cheapest courses, followed by the laboratory-based courses; special education courses were the costliest of all. 14. The university needed to explore the possibilities of supplementing its resources by instituting a consultancy unit, starting new auxiliary enterprises in unconventional areas, organizing extension programmes, and fund-raising drives.

294. KUMAR, L., *A Study of Economic Aspects of Higher Secondary Education in Delhi*, Ph.D. Edu., JMI, 1983

The objectives of the study were (i) to find out the school outputs, namely, academic achievement of students, motivational level of students, educational expectation of parents and educational attitudes of teachers, (ii) to find out the school inputs, namely, student input, school achievement, teacher input, cost input, etc., (iii) to find out the relation between school inputs and outputs, (iv) to find out the functional classification of school expenditure, (v) to find out the efficiency of education in higher secondary schools under study, (vi) to find out the relationship between efficiency of education and the functional classification of school expenditure, (vii) to find out the economics of scale in the case of the selected sample of Delhi schools, and (viii) to find out the optimum size of higher secondary schools in Delhi. The researcher formulated the following hypotheses: (1) There was no significant effect of school inputs on school outputs. (2) At the existing level of costing no relationship existed between efficiency in school education and the functional classification of school expenditure. (3) The economics of scale do not work in the case of schools. (4) There is no relationship between size and cost of an educational institution.

The study was conducted in 20 selected higher secondary schools. These schools were of four types: public schools, government schools, kendriya vidyalayas, and government-aided schools. The study was divided into two parts. In the first part, the effectiveness of schools was analysed with the help of a 'School Effectiveness Model'; in the second part, efficiency in relation to cost and size was analysed with the help of a 'Cost Efficiency Model'. The tools used were Jenkin's Non-verbal Intelligence Test adapted to test the general mental ability, and three different information schedules prepared for students, teachers and schools by the investigator. These schedules covered various aspects, viz., initial ability of students, motivational level of students, socio-economic background of students, teachers' attitudes towards students, school environment and education, influence of school environment on students, parents expectations about their children, and performance of students in the final examination. Multiple regression and step-wise regression analysis were used for data analysis. For analysing the process of schooling which produced several outputs, Two Stage Least Square (2 SLS) was used.

The major findings of the study were: 1. Socio-economic status and per capita income had a significant effect on achievement. 2. Mother's education was a significant factor for the achievement of students while father's education contributed to motivation. 3. A nuclear family contributed more to the motivation than a joint family. 4. Laboratory facilities available in Delhi schools promoted healthy educational attitudes of teachers. But they were negatively correlated with achievement of students. 5. There was inverse relationship between school buildings and motivation of students and the same relationship was indicated between school buildings and educational attitudes of teachers. 6. Compared to experienced teachers, less-experienced teachers contributed more to the achievement of stu-

dents. 7. Academic qualifications had a favourable effect on the motivation of students while professional qualifications of teachers favourably affected the achievements of students and adversely their motivation. 8. Parents' expectation was found higher if one of them (either father or mother) was not alive. 9. School environmental variables affected the parents, educational expectations indirectly through the motivational level of students. 10. Teacher input variables like salaries of teachers, classes taught, courses taught, workload, experience of teachers, had an adverse effect on the educational attitudes of teachers. 11. Efficiency of education was found directly related to auxiliary costs, but inversely related to the instructional cost. 12. Schools were running below their optimum size. The optimum size of school was 1624.

295. KUMAR, S., *Cost of Secondary Education in Rajasthan*, SIERT, Rajasthan, 1968

The study aimed at (i) working out the cost of educating the child at various stages of schooling, (ii) examining the issue of reducing the number of uneconomic institutions, and (iii) assessing the work of teachers of all types of schools.

The pro-forma for the survey was circulated to 101 schools. Only 71 schools responded. The criteria for selection of schools were population below 5200 in the habitation, existence of a secondary or higher secondary school within a radius of ten miles, absence of feeder middle schools within a radius of six miles, absence of hostel facilities, teacher-pupil ratio below 1:50, and enrolment (less than 20) in class IX even after three years of upgradation.

The findings were: 1. There were five classes from VI to X with 35 students in each. The teacher-pupil ratio was 1:20. 2. The average cost per pupil in higher secondary schools varied from Rs. 472 to Rs. 103. 3. The cost per pupil was in direct proportion to the teacher-pupil ratio. 4. Most of the uneconomic schools were situated in habitations having a population of less than 5000 persons. They did not have any feeder schools. They had another secondary and higher secondary school within a radius of ten miles or even less than this. They had a teacher–pupil ratio of more than 1:15. Enrolment in these schools did not increase even after four or five years. 5. In the case of secondary schools, the maximum per capita cost was Rs. 470 and the lowest was Rs. 93. 6. There were schools which could not reasonably hope to increase their student population because of the limitation of the population they served. 7. Schools upgraded the previous year were also found uneconomical in some cases.

296. KUMARAN, D., *A Study of Cost of Education in Annamalai University during the Post-Independent Era*, Ph.D. Edu., Anna. U., 1982

The main objective of the study was to analyse the revenue and cost of education in Annamalai University during the period 1947-48 to 1978-79, facultywise and departmentwise. It was a historical study, the required data being collected from the annual budgets, reports and other relevant records of the university.

Revenue was analysed under six broad categories—academic fees, publications, assets, auxiliary, other sources, and miscellaneous, and costs under categories like academic, administration, auxiliary, welfare, salaries, equipment and miscellaneous. To study the trend of growth in revenue and costs, the fixed-base relative indices and chain relative indices were calculated for the various faculties and departments with respect to major components/items of total revenue/cost. Regression analysis was made taking the unit cost as the criterion variable and age of the department, enrolment, salary of the teaching staff and the ratio of non-teacher cost to total cost as independent variables.

The main findings were: 1. The revenue at current rates increased from Rs 12.03 lakh in 1947–48 to Rs 114.66 lakh in 1978–79; at 1961–62 prices the increase was from Rs 18.90 lakh in 1947–48 to Rs 34.55 lakh in 1978–79. 2. At 1961–62 prices, the per student revenue was Rs 1040.42 in 1947–48 and Rs 486.44 in 1978–79. 3. Academic fees (51.8 per cent) and income from other sources (endowments and grants—36.6 per cent) formed the major sources of revenue. 4. At current prices, the total cost of education in the university in the year 1947–48 was Rs 11.80 lakh and in 1978–79 Rs 114.02 lakh, and per student cost was Rs 649 in 1947–48 and Rs 1605 in 1978–79; at 1961–62 prices the total costs for the two years were Rs 18.54 lakh and Rs 34.36 lakh and the per student cost Rs 1020 and Rs 484. 5. The administration cost and miscellaneous cost had fallen and academic cost had increased during the period. 6. The salary of the teachers formed 38.3 per cent of the total cost and the salary of the non-teaching staff 19.5 per cent. 7. The per student total cost was high for the agriculture faculty (Rs 2004.50) and low (Rs 763.53) for the education faculty. 8. The per student teaching cost in the humanities was high (Rs 1734.70) for the De-

partment of Linguistics and low (Rs 31.94) for the Department of Tamil; in the sciences it was high (Rs 1527.54) for the Marine Biology Department and low (Rs 148.00) for Mathematics; in the professional courses it was high (Rs 1191.32) for the Department of Agriculture and low (Rs 252.78) for the Department of Education.

297. MADI, K.R., *Efficiency of Public Expenditure on Social Service: A Case Study in Cost-Benefit Analysis of General Higher Education in Karnataka*, Ph.D. Eco., Kar. U., 1982

The objectives of the study were to determine (i) the most profitable level of general higher education both from the social and private points of view, (ii) to calculate the rates of return of general undergraduates over matriculates, general graduates over general undergraduates, general double graduates over general graduates and general postgraduates over general graduates.

The sample of the study consisted of 225 ex-students of an institution of higher education ten years after they left the institution. The data were obtained from records of the college as well as from the records of Karnataka University, Dharawad. Questionnaire and interview techniques were employed to collect data from the subjects. Regression and percentage analysis were employed to analyse the data.

The major findings were: 1. Of the three, age, schooling and family income, number of years of schooling appeared to be the least important variable for determining returns (earnings). 2. Family income was a significant variable in explaining the earnings of a general double graduate. 3. For all the three types of education (science, arts and double graduation), all the three factors—schooling, family income and age—together explained 61 per cent of the earnings. 4. The investment in general undergraduate courses was most profitable in Karnataka. Next to that was the investment in general postgraduate courses and general double-graduation courses. 5. The opportunity for higher education was confined largely to better-off classes. 6. On the cost side, the cost of higher education (up to double-graduate level) in Karnataka was much less subsidized as compared to the subsidy in India as a whole. 7. On the benefit side, large variations were found in the earning patterns of educated people in public and private sectors. Pay scales in general did not bear any exact relationship with academic qualification.

298. MANVIKAR, S., *A Critical Study of the Relationship between Expenditure Pattern and Efficiency Levels of the Secondary Schools of Bangalore District*, Ph.D. Edu., Mys. U., 1983

The major objectives of the study were (i) to compare the expenditure patterns of different types of secondary schools of Bangalore district, (ii) to compare the efficiency of Bangalore district rural and city secondary schools, (iii) to find out the relationship between the components of expenditure and components of efficiency of the secondary schools of Bangalore district, and (iv) to find out the relationship of school factors like strength, age of the school, teachers' age, qualifications and experience with school efficiency and expenditure.

The sample consisted of ten per cent of the secondary schools of eighteen educational districts (except Bangalore district) of the Karnataka State for developing a reliable tool to measure school efficiency. The expenditure–efficiency relationship was studied only in 110 schools of Bangalore district—rural and city. A tool was developed to obtain information on expenditure pattern. A School Efficiency Index Scale was also developed by the researcher. Information about expenditure was obtained for three academic years—1977–78, 1978–79 and 1979–80. The investigator visited 25 schools for cross-checking the information. For data analysis and drawing conclusions, mean, standard deviation, t-test, correlation, and simple linear and multiple linear regression analyses were used.

The major findings were: 1. Bangalore city and rural secondary schools differed in respect of expenditure pattern and efficiency. City schools spent significantly more on some items of expenditure than rural schools. Again city schools were significantly more efficient than rural schools in terms of their total efficiency and certain components of efficiency. 2. Total efficiency and total expenditure were not significantly related in the case of city and rural secondary schools. 3. In city schools, expenditure on furniture and equipment, contingency and cocurricular activities was associated with total efficiency, whereas in the case of rural schools, only expenditure on contingency was significantly associated with total efficiency. Regarding components of school plant efficiency, personnel and organizational efficiency and school–community relationship efficiency were significantly related to expenditure on furniture and equipment in city schools. In case of rural schools, school plant and equipment–efficiency were related to

expenditure on building and financial-management efficiency was related to expenditure on non-teaching staff salary. 4. None of the important components of school efficiency like personnel and organizational efficiency and outcome efficiency was found related to expenditure on salary. 5. In the case of city schools, larger schools were more efficient in terms of their total efficiency and outcome efficiency than smaller ones. In the case of rural schools, large schools had better utilization of resources. 6. All expenditure variables together could explain only about 21 per cent of the variance in the total efficiency in the case of rural schools and about 29 per cent in the case of urban schools.

The findings imply that there is a need for a differential urban-rural grant-in-aid code policy for granting permission to start new secondary schools and for better plans for allocation of resources. The study has also underlined the need for consolidating non-viable secondary schools in rural areas.

299. MISRA, G., *Educational Finance for Primary Education in India after Independence (1950–1975)*, Ph.D. Edu., Kan. U., 1984

The study was designed to get an idea about the provision of finances for primary education from different sources and an analysis of the expenditure on different items. It also aimed at calculation of per student cost of primary education in different types of schools. An attempt was also made to compare the expenditure on primary education in different states.

The relevant figures were collected from reports published by the Government of India and state governments.

The main findings of the study were: 1. The main sources of finance for primary education are grants from the state, grants from local bodies, fees and endowments, etc. 2. The main source of finances for primary education is aid from the government. The income from fees and other sources accounts for only two to five per cent of the total income. 3. About 93 to 97 per cent of the total expenditure on primary education is spent on salary and allowances of the teachers. 4. In 1950–51, 10.4 per cent and 9.6 per cent of the total expenditure was on primary education of boys and girls respectively. 5. In 1975, per student expenditure on primary education was twice the per student expenditure in 1965. 6. Progress of primary education in states of Kerala, Tamil Nadu, Uttar Pradesh and Maharashtra was the best. It was the slowest in Jammu and Kashmir, Bihar and Orissa.

300. MOONIS RAZA, et al., *Impact of Educational Levels on some Dimensions of Development—A Study of Rural Households*, NIEPA, 1986

The study was an attempt to answer the following questions: Does educational level influence adoption of new technologies and, if so, is there a critical level of education that influences adoption? Does educational level influence diversification of economic activities? What is the nature of the relationship between educational levels and household linkages with reference to market, social and cultural aspects? Does educational level influence the capacity to use and absorb other developmental efforts? Does the educational level influence succeeding generations?

The conclusions are based on the data collected from about 30,000 rural households in 245 randomly selected villages located in Tumkur district of Karnataka. The distribution of education among various classes of rural households, the expansion of education in rural areas, the role of education in agricultural modernization, demographic behaviour and quality of life were studied.

301. NAGIA, S.K., *A Study of Industrial Workers Education and Training in India with special reference to Madhya Pradesh*, Ph.D. Eco., Jab. U., 1979

The major objective of the study was to find out how far the workers education scheme (WES) started by the Central Board of Workers Education (CBWE) contributed to the educational proficiency of workers.

This was a descriptive survey. The data were collected through records, reports and relevant documents. The reports of the CBWE provided the main data source. Besides this library study, data were collected from 56 worker-teachers using a questionnaire.

Some of the major findings were: 1. The contents of the syllabus of the workers education programme were of a general nature and did not answer the needs of a specific group of workers. 2. The audio-visual material available was too inadequate to sustain the interests of workers. 3. There was much domination of the government over the programme with little scope for education officers to take initiative in meeting situational

needs. 4. Women's education did not receive adequate attention. 5. Most of the workers who attended classes believed that WES developed trade union consciousness and helped them appreciate labour–management problem better.

*302. NAUTIYAL, K.C., *Economics of Rural Education in Western Uttar Pradesh*, Ph.D. Eco., Mee. U., 1985

The objectives of the study were (i) to examine the nature of relationship between educational and economic variables, (ii) to study factors influencing demand for education, (iii) to find out the relationship between education, earning and income distribution, and (iv) to study the impact of education on agricultural productivity and adoption of improved farm practices, and on general attitudinal changes, including family welfare practices in a heterogeneous socio-economic rural framework.

The study was a survey-cum-analytical attempt to discover inter-relationship between educational and economic variables in a rural context, using micro-level secondary data as well as micro-level household data. The study was conducted in four blocks of Meerut and Badaun district and included two major religious communities, viz., Hindu and Muslim. The sample of 1800 individuals from 241 villages belonging to forty castes was selected by adopting a multi-stage, fixed proportion random sampling design. Primary data on 83 variables were obtained using a household questionnaire. The sources of secondary data were published and unpublished reports of various governmental and non-governmental agencies. The reference period for most of the data was 1978–81. The data obtained were analysed using average, percentage, coefficient of correlation, regression coefficients and multivariate regression.

The study revealed: 1. Literacy rate of enrolment ratio had little association with per capita income, irrigation intensity, cropping intensity, etc. 2. The magnitude of inter-district disparities among educational variables like literacy rate, enrolment ratio, teacher-pupil ratio, per pupil expenditure and population covered per school at different levels were more pronounced than for economic variables like per capita income, irrigation intensity, etc. 3. The micro-level data exhibited the inter and intra-caste and sex inequalities in education and income in rural society. 4. The per pupil state expenditure showed little relationship with literacy rate or enrolment ratio. 5. The crude work-force participation rate showed significant negative association with literacy rates and the enrolment ratio. 6. The occupational pattern of the work force influenced the demand for education in rural areas. 7. The per capita gross value of agricultural output per worker showed significant negative association with a large number of educational variables. 8. Schooling facilities, literacy as well as enrolment rate were positively related. 9. Higher teacher–pupil ratio adversely influenced the demand for education in rural area. 10. Micro-level analysis distinctly showed a positive relationship between education and agricultural development. 11. Earnings and educational attainments had positive association, irrespective of caste and sex. 12. Forward classes owing land and assets enjoyed *de-facto* access to education. 13. The relative increase in earning with the increase in educational level was substantially higher for ST than the forward classes. 14. The correlation coefficients between attitude towards small family and educational level were significant for backward Hindu classes. 15. The correlation coefficients of family planning practices and education were statistically significant.

303. NIEPA, *Education Financing and Equity: A Comparative Study of Haryana and Kerala*, New Delhi, 1986 (Unesco financed)

The objectives of the study were (i) to analyse the financial flows in the given two years, (ii) to examine the allocations by levels/objects, etc. to infer possible implications for equity and, specially, to see if changes in allocations were related to changes in equity, and (iii) to examine the policies and procedures of government assistance in the field of education, either for establishment of institution or by way of scholarship or compensatory finance.

The study was based on the analysis of the available secondary data collected from various official and semi-official publications.

The major findings of the study were: 1. Both Kerala and Haryana presented a picture of educational growth. There was also marked reduction in inequalities between the groups. 2. The share of expenditure on hostels and scholarships declined as a part of overall decline in indirect expenditure. This affected inequality adversely. 3. Non-teaching expenditure was very low, indicating that schools were going without needed equipment.

4. Private initiative in education was declining, thus drying up an important source of financing, which would affect expansion of education. 5. The share of elementary education in allocation and expenditure needed to be considerably increased in Haryana. 6. Grants-in-aid rules needed to be liberalized, particularly in respect of backward areas. 7. Capital grants were needed on the basis of assessment of needs. 8. Free education would have limited impact on equity. A more substantial policy of compensatory finance was necessary for a breakthrough in equity. Attention to equality was equally necessary.

304. NIEPA, *Financing of Education and Equality of Opportunity with reference to Uttar Pradesh and Kerala,* New Delhi, 1986

Equality of opportunity in education and equity are areas of investigation which have received considerable amount of attention. Indeed the debates are by no means closed. But one important aspect and one very relevant for policy purposes is the system of financing education for achieving objectives like efficiency, equality or diversity and this has not received the attention due to it.

The main objectives of the investigation were (i) to study the system of financing education for achieving objectives like efficiency, equality or diversity, and (ii) to focus on problems arising out of inqualities in education in different districts.

The major findings of the study were: 1. There were inequalities of many kinds within Uttar Pradesh and Kerala—to a lesser extent in Kerala than in Uttar Pradesh. Howèver, in both the states, to some extent, inequality was reduced as indicated by the fall in coefficient of variation from 69.7 to 50.6 in UP and from 27 to 14 in Kerala. 2. For the country as a whole, the per capita expenditure had gone up from Rs 48.7 in 1979–80 to Rs 81.00 in 1983–84. The coefficient of variation had gone down from 56.3 to 46.7. The coefficient of variation for Uttar Pradesh had gone down from 69.7 to 50.6 and for Kerala during the same period standard deviation had moved from 7.35 to 9.6. The coefficient of variation had gone down from 27 to 14. The per capita expenditure in Kerala had gone up from Rs 26.81 in 1970–71 to Rs 63.38 in 1976–77, while for UP it had limped from Rs 11.77 in 1970–71 to Rs 29.82 in 1976–77. Uttar Pradesh still had the lowest per capita expenditure on education and had a great deal of disparity in educational expenditure by districts. 3. In Kerala there was a tendency towards greater equality at all levels of education due to various reasons like the long tradition of free primary schooling, spread of literacy, extension of free schooling to the high school stage and not beyond, supply of free meals to some categories of students, the broad base of the educational system and the structure of higher education. The pattern of expenditure in terms of sectoral composition as well as by items for Kerala had been such that it had resulted in greater equality and the educational system was performing better. Consequently, the limit to achievement, at least in terms of ensuring a minimum level of education to a great majority of the population, thus appeared to have been reached in Kerala. 4. A comparative study of the pattern of expenditure and revenue both for UP and Kerala indicated that in 1983–84, Kerala had the highest non-plan revenue expenditure of 35.1 per cent and highest per capita expenditure of Rs 110.15 while UP had 25.7 per cent or Rs 46.72 as the per capita expenditure. Kerala's expenditure in education as a percentage of its own total tax revenue and sales tax were 57.6 and 91.4 per cent while for UP it was 52.2 and 94 per cent. A comparison of the central assistance to the two states showed that UP had not come out very favourably, therby indicating need for greater equity consideration in central assistance to states. 5. As regards inter-district variations in educational expenditure in UP, in 1976–77, out of the total expenditure on all recognized educational institutions, the percentage share was the highest in Allahabad with 6.2 per cent followed by Varanasi with 5.8 per cent, Kanpur with 5.6 per cent and the lowest in Uttarkashi 3 per cent. Per capita expenditure in Uttar Pradesh in the same year was Rs 27.60. The range of variation in all the districts was between Rs 11.70 in Unnao to Rs 75.90 in Nainital. In 22 districts the per capita expenditure was more than the state average. In the other 34 districts, it had been less than the state average. 6. Cost per student in primary schools varied from Rs 306.70 in Uttarkashi to Rs 40.80 in Deoria. For the state in 1976–77, it was Rs 64.50 and in 30 districts it was more than the state average.

The major policy conclusions of the study are to the effect that there is need for regionalization of financial policies of states in the matter of releasing grants and funds to the districts. There has to be greater concern with the need of the individual region at all levels and appropriate planning and financial procedure changes.

305. PADMANABHAN, C.B. and TILAK, J.B.G., *External Financing of Education,* NIEPA, 1986

The objectives of the study were a critical analysis of the impact of external financing of education with a view to making suggestions for the improvement in the process of identification, preparation and approval of educational projects.

The major conclusions were: 1. Aid largely used to flow for higher education compared to lower level of education; aid had largely concentrated on technical assistance and items of construction and equipment; in absolute terms, the share of every source had increased significantly; there was a remarkable decline in the relative share of private, non-profit sources and educational aid. 2. The share of bilateral and multilateral sources increased; bilateral aid concentrated on technical assistance; multilateral aid, on facilities and equipment, and the private, non-profit agencies concentrated on reforms. 3. Another characteristic of aid was that it was misdirected as could be noted from its geographical distribution. External resources flowed into India from various sources. However, they were largely concentrated on technical education in the prestigious IITs and a few selected universities where centres for advanced study were developed.

306. PANDEY, S.K., *The Economics of Correspondence Education in Indian Universities,* Ph.D. Eco, Mee. U., 1980

The study was conducted with the major objectives of studying the effectiveness of correspondence education in Indian universities on the basis of, (i) cost-benefit analysis, (ii) types of cost, and (iii) academic performance.

The survey method was adopted for the conduct of the study. The cost structure and academic performance of the correspondence system were to be compared with those of the regular system. The sample included seven Indian universities offering regular courses as well as correspondence courses at undergraduate level. They were Meerut, Delhi, Panjab, Punjabi, Bombay, Sri Venkateshwara, and Madurai Kamaraj Universities. The cost structure and examination results of affiliated colleges of above universities were studied. Proformas and checklists were used for data collection. Statistical techniques like chi-test, Pearson's product moment correlation and cost-benefit analysis were used in the study.

The following were the major findings of the study: 1. There was a significant difference between correspondence courses and regular courses with respect to recurring income. 2. Correspondence courses supported themselves without government subsidy and mostly depended on students' contributions. 3. No difference was marked with regard to non-recurring income between regular and correspondence courses. 4. On total income, there existed differences between the two streams. 5. The differences in recurring and non-recurring expenditures of regular and correspondence education were not significant, although their heads of expenditure were not similar. 6. Significant differences existed between per student expenditure on direct cost, indirect cost and total cost at enrolled and appeared level, whereas no significant difference was marked with regard to direct cost per student for pass level. 7. There existed differences between per student expenditure on indirect cost and total cost at pass level. 8. There was no difference in terms of wastage cost per student at direct, indirect and total levels of regular and correspondence streams. 9. The difference of direct cost per student (failure) of two streams was not significant, but the differences of indirect cost and total cost per student (failure) of the two streams were significant. 10. For all enrolled, appeared, passed students of graduation courses, correspondence education was found to be more economical, as the total cost-benefit per student was Rs 2823 in 1978 current prices.

307. PANWAR, J.S., *Effect of Short Duration Agricultural Training on Farmers' Earning,* Ph.D. Edu., Udai. U., 1978

The major objective of the study was to see the overall impact of training on farmers' lives, particularly, the gain in this functional knowledge, and change in their attitude.

A specially designed interview schedule, a knowledge test and an attitude scale were the tools used for data collection. A quasi-experimental method was used for the study. Descriptive statistics were used for data analysis.

The major findings were: 1. A five-day training course resulted in significant gains in knowledge in all areas of farming included in the course. 2. It resulted in a significant change in the farmers' attitudes towards new agricultural practices, high-yielding varieties of seeds, use of fertilizers and plant protection. 3. There was no significant effect of age, caste, size of landholding, education, socio-economic status on gain in knowledge. 4. A majority of participants were satisfied with the duration of the course, adequacy of content

and methodology of training. Some participants, however, suggested extension of the course to seven days. 5. Participants suggested an effective follow-up programme, including visits by experts, supply of literature, and further organization of refresher courses.

308. PARASHAR, G.S., *The University Finances in Madhya Pradesh*, Ph.D. Edu., DHSGVV, 1981

The objectives of the study were (i) to provide a clear picture of the financial position of different universities in Madhya Pradesh (MP), (ii) to discuss sources of income, their proportional contribution, limitations and trends in various universities in MP, (iii) to identify the highlights of expenditure and emerging trends therein, (iv) to estimate the unit cost in each university and its adequacy, and (v) to suggest measures to improve university finances in MP.

The study covered all the universities of MP which were in existence between 1950-51 and 1975-76, except the Agriculture University, Jabalpur, and the Music University, Khairagarh. The study was limited to this period only (1950-51 to 1975-76). Following the techniques of the historical and descriptive method of research, the data were collected from primary sources like yearly statistical reports published by the Ministry of Education, Government of India, under the title *Education in Universities in India*, a special issue on education in states published under the title, *The Education in Reorganized States in 1955-56*, annual accounts of different universities of the states, and annual reports of various universities. Along with these data from secondary sources like reports of various commissions and views of various officials, viz, vice-chancellors, educationists, and experts associated with direct financial administration of the universities of MP were collected.

The major findings of the study were: 1. Formerly, block grants were given to the universities for their maintenance and these were revised every five years. With the coming into existence of the University Grants Commission (UGC), developmental grants began to be received from it, on the basis of sharing a part of the total expenditure by the state government. The state education department which was to give these grants could not often take the burden of matching UGC grants. Hence, several developmental schemes could not be implemented. 2. In order to improve the organization and promotion of higher education, maintain standards of teaching, research and examinations, and to advise the government in respect of higher education, the Uchha Shiksha Anudan Ayog was established in Bhopal in 1973. The major function of Uchha Shiksha Anudan Ayog was to give maintenance grants to, examine the developmental plans of, and to provide funds for the universities. For any new plan which involved additional expenditure, the Ayog had to seek the permission of the state government. Section 51 of the MP Universities Act, 1973, authorized the state government to assume financial control of the universities. In the case of financial mismangement, it had the power to remove the vice-chancellor on grounds of maladministration and appoint a successor and a committee of experts to help him. This showed that it was the state government which had final authority on the universities and not the Ayog. The Ayog could not develop into an independent body like the UGC. Its function was reduced to that of a post office. 3. The major source of recurring income of the universities was grant aids from the central and state governments. But this varied from university to university. It was 59 per cent in the case of Sagar University and 7 per cent in the case of Bhopal University during 1975-76. The variations were mainly in developmental grants; other sources of income were examination fees, which varied from 18.48 per cent (Vikram University) to 1 per cent (Indore University), miscellaneous receipts like donations, telephone charges, hostel fees, transportation charges, sale of publications, guest-house rent, etc. which varied from 30.46 per cent (Bhopal University) to less than 1 per cent (Indore University). The non-recurring income which was made up of UGC grants and state grants was always highest in the case of Sagar University and always lowest in the case of Rewa University during the period studied. 4. The major annual recurring expenditure of universities also varied extremely during the studied period. It was highest in case of Sagar University and lowest in case of Rewa University. The main items of expenditure were the teaching departments, including the salaries and allowances of teachers, establishment expenses, expenditure on conducting examinations and miscellaneous expenses. The non-recurring expenditure also was the highest in the case of Sagar University and lowest for Bhopal University. This expenditure was mainly on building construction, equipment and furniture. 5. All the universities, except those of Rewa, Bhopal and Raipur, were running in deficit. The highest deficit was in case of Sagar University and the lowest for Jiwaji University. 6. The annual unit cost per student on teaching, establishment, books and journals, and equipment was highest in the case of Vikram University (Rs 4034.27) and lowest in the case of Sagar University (Rs 129.80). 7. The major financial problems observed

were the deficit financial position in most of the universities, no encouragement to gifts and donations, availability of UGC grant for developmental schemes only and not for maintenance, inability of the state government to share the financial burden, uneconomic expenditures in the universities, advance increments to teachers and clerks, no uniformity in respect of salary revisions in different universities, special relaxations in the age of retirement to some employees, payments for invigilation work, losses due to non-observance of proper rules, unnecessary interference of state government in financial matters, conventional budgeting, no uniformity and updating of accounts, and non-availability of reserve funds or endowments in the universities. 8. Different suggestions forwarded to improve the financial position of the universities were the provision of more grants to the universities from the state government making the Uchha Shiksha Anudan Ayog an independent body with adequate resources, deletion of the Section 51 of the MP Universities Act, 1973, revision and enhancement of government grants to the universities every second year, making provision of charging developmental fees from the students, provision of reserve funds for the universities, limiting establishment expenditure to 10 per cent and miscellaneous expenditure to 20 per cent of the total expenditure, enrolment of more students to curtail the per student cost, appointment of employees on actual-requirement basis and ban on advance increments, declaration of teaching as a non-vacational job, examination of losses by an agency within the university and fixation of responsibility for it, checking of irregularities in accounts pointed out by auditors, etc.

309. PINTO, S., *Education and Industrial Productivity—A Case Study of Workers and Supervisor Employed in Engineering Industry in Pune Metropolitan Region*, Ph.D. Edu., Poona U., 1985

The research was undertaken to find out (i) a minimum level of general education to enable an industrial employee to perform his job efficiently, (ii) the specific technical training necessary for him to perform his job satisfactorily and increase productivity, (iii) the role of work experience in increasing productivity, and (iv) factors contributing towards job satisfaction of industrial employees and their relation to education and training.

The sample was selected in two phases. In phase one, 25 industrial units were selected randomly out of units located in the Pune and Pimpri-Chinchwad area employing between 50-299 workers and those employing more than 300 workers. Out of these, 25 industrial units, 142 unskilled and 306 semi-skilled workers and 134 supervisory staff were randomly selected. The supervisors' rating was the main tools used to indicate level of productivity and performance of the workers. Self-rating, total monthly emoluments, rate of increase in emoluments were additional indicators of productivity and performance. T-test and chi-square tests were used to test the significance of difference between various measures.

The major findings were: 1. The unskilled grade was an entry grade for employees who did not have any technical training. The semi-skilled grade was the entry grade for those with technical training at ITI's. For such employees, the supervisory grade was the terminal grade. However, due to limited promotional avenues, the majority of semi-skilled workers remained in that grade until retirement. The supervisory grade was the starting grade for most of the higher positions and degree and diploma holders were generally recruited to this grade. 2. Inter-firm mobility of the employees was very low and their promotional avenues were largely limited to internal promotion. 3. About one-tenth of the unskilled workers did not have any schooling, one fifth had less than four years of general education and one-third had less than seven years of general education. On the whole the employers appeared to fix a minimum education of four years for unskilled workers as a requirement and persons with seven years of general education were preferred. For the skilled grade, a minimum of seven years of education was the requirement and people with SSC-level education were preferred. The same criteria held good for supervisory grades. There was, however, a trend towards increasing the minimum educational qualifications for each category of employees. 4. A large proportion of skilled as well as supervisory employees did not have any technical training. There was, of late, an increasing tendency to recruit people with more and more technical education to these grades. 5. Nearly three-fourths of unskilled workers and three-fifths of skilled and supervisory employees had a rural background. This showed an increasing trend within skilled and supervisory staff but a decreasing trend among unskilled workers. 6. In the case of all workers except skilled workers recruited after 1969, the productivity and performance of employees with seven or more years of education was significantly higher than that of workers with less than seven years of education. 7. Technical training contribut-

ed to increased productivity and improved performance. 8. The productivity and performance of degree and diploma holders were not significantly better than those of technically trained supervisory employees. 9. Skilled and supervisory employees with seven or more years of education had a longer duration of work experience than technically trained employees. Within the supervisory grade, technically trained persons had significantly longer durations of work experience than degree and diploma holders. 10. A large percentage of employees of all categories were satisfied with their job. The major satisfying factors were emoluments and security of service. The other factors contributing to job satisfaction were the availability of promotional avenues in case of skilled and supervisory employees, cordial relations with supervisors, opportunities to study new things and good on-the-job training. 11. Workers with higher educational level had good job satisfaction as they had better promotional avenues outside their firms. The keen desire for promotion appeared to be one of the factors contributing to further education of the workers.

***310.** RAJAIH, B., *Economics of Education, Government Evening College, Khammam,* A.P., 1987

This research was conducted with the main purpose of studying, (i) the progress of primary education in Andhra Pradesh from 1956-57 to 1979-80, with respect to enrolment, school efficiency, input–output ratio, representation of women, SC and ST as students and quality of teachers, (ii) the investment in primary education of AP in terms of public expenditure, average per pupil expenditure, aggregate outlay on education (plan and non-plan), annual compound growth rates etc., (iii) wastage in primary education in AP and, (iv) outcome of primary education in relation to other developmental sectors.

Data were collected from official records. Descriptive statistical techniques were used for analysis of data.

The results of the study were: 1. In A P the enrolment index (out of 10,000) population increased from 724 in 1956-57 to 933 in 1963-64, and to 962 in 1978-79. The average enrolment during 1956-57 to 1979-80 was 69.49 per cent. The trend of enrolment indicated progress of primary education in the state. The enrolment of girls increased faster than that of boys. The tribals exhibited weak preference for girls' education. In all, out of 100 boys admitted in Class I, only 32 reached Class V. 2. The primary school teacher index increased during the period. Also, the percentage increase of women teachers was found to be greater than the average increase in the number of teachers. 3. During the period 1956-57 to 1978-79, public expenditure on primary education rose by 678 per cent while unit cost increased by 228 per cent. However, the proportion of state revenues invested in primary education during 1956-57, i.e., ten per cent, decreased to 4.84 per cent in 1978-79. 4. The average annual growth rate in the state's revenue and public outlay on education increased during the period under study. 5. The average annual per pupil total public support increased from Rs 27.73 in 1956-57 to Rs 107.57 in 1978-79. 6. The wastage rate tended to decline in all classes in AP during the period of study. The average annual cumulative dropout rates in respect of girls were found to be higher than that for boys in all classes during this period. The wastage was highest among children of ST communities. This was attributed to the poverty of the tribal people. 7. The stock of human capital in AP increased from 40.76 lakh literates in 1951 to 160.24 lakh literate persons in 1981. Human capital increased at a faster rate in the first two plans in the state. The Telengana region was found to be backward in terms of educational output. 8. The total cost of teachers in 1979-80 was estimated at Rs 132.05 crore. There was need for increasing the output of teachers from teacher-education institutions.

311. RAM, S., *An Evaluation of Correspondence Education in terms of Cost and Academic Performance,* Ph.D. Edu., Mee. U., 1984

The objectives were (i) to estimate the cost per unit (institutional cost, student cost, teacher cost and non-teacher cost) of correspondence education in Indian Universities at graduate level, (ii) to evaluate the academic performance (quantitative and qualitative) of correspondence education in Indian universities, (iii) to compare the cost per unit and academic performance of correspondence education in different Indian universities, (iv) to estimate and compare the cost per unit (institutional cost, student cost, teacher cost and non-teacher cost) of correspondence, regular and private education of Meerut University and to evaluate the performance of pupils of the three systems, and (v) to analyse the attitude of correspondence students and teachers towards correspondence education.

Methods of multi-stage and purposive sampling followed by cluster sampling techniques were used. The study was conducted in two phases. In the first phase, the cost and academic performance of Indian universities were analysed. Out of 19 universities organizing

correspondence education, seven (Delhi, Panjab, Punjabi, Bombay, S.V. University, Madurai, and Meerut) were selected by multi-stage and purposive sampling techniques. In the second phase, close study of correpondence education of Meerut University was conducted. In this study the cost and academic performance of students of correspondence education was compared with the cost and academic performance of students of regular and private education. The eight regular degree colleges affiliated to Meerut University were selected by multi-stage sampling. All the students of these colleges were taken intact for estimating the cost per unit and academic performance of students of regular education. For the study of attitude of correspondence students and teachers towards correspondence education, purposive sampling was used. The data regarding cost and academic performance of the seven selected Indian universities were collected from annual budgets and annual results of the respective universities. For measuring the attitude of students and teachers towards the functioning of correspondence education, a Correspondence Course Attitude Scale was developed by the investigator. The data were analysed by computing percentages and using chi-square and t-test.

The findings were: 1. Total cost per unit of correspondence education in different Indian universities differed from university to university. 2. The quantitative output of correspondence education in different Indian universities differed significantly but the quantitative output of Meerut University was very near to the average quantitative output of Indian universities. 3. The quality of academic performance of students of correspondence education in different Indian universities differed significantly but the quality of academic performance of students of correspondence education in Meerut University was slightly superior to the average quality in Indian universities as a whole. 4. In respect of Meerut University, the total cost per unit of correspondence education was lower than the total cost per unit of regular university education, institutional cost per unit of correspondence education was less than the institutional cost per unit of regular education. Student cost per unit of correspondence education was lower than the student cost per unit of regular education though the difference was not significant. Teacher cost per unit of correspondence education was significantly less than the teacher cost per unit of regular education. The non-teacher cost per unit of correspondence education was significantly lower than the non-teacher cost per unit of regular education. The total cost per unit of correspondence education was significantly higher than the total cost per unit of private education, and student cost per unit of correspondence education was higher than the student cost per unit of private education. 5. Academic performance of correspondence education was not higher than the academic performance of regular education both in quantity and quality. 6. The academic performane of correspondence education was better than the academic performance of private education both in quantity and quality. There was significant difference between academic performance of correspondence and private education. 7. The academic performance of regular education was significantly higher than the academic performance of private education. 8. The system of education having higher cost per unit was found to give better academic performance. 9. Students and teachers of correspondence education had a favourable attitude towards it. The attitude of teachers was more favourable than that of students but the difference was not significant. 10. The male students of correspondence education had a favourable attitude and female students had an unfavourable attitude towards correspondence education. 11. Employed students had a favourable attitude and unemployed students had an unfavourable attitude towards correspondence education.

312. SHANKAR, B., *Women's Employment in Bihar with particular reference to Educated Women*, Ph.D. Eco., Bhagalpur U., 1980

The main objective of the study was to examine the changing status of working women in Bihar, as revealed through the existing literature and studies and the available secondary data.

An action-oriented study was conducted. The study was mainly based on published sources. Empirical studies, journals, newspapers, magazines, census reports, documents, etc. were critically studied.

Some of the main findings were: 1. Despite a declining trend in the employment of women there had been a remarkable rise in the number of working women in many white-collar jobs. 2. The number of unemployed women was increasing. 3. Women had poor occupational status due to various reasons, such as lack of adequate education, inadequate skill and vocational training. In developing countries, women's employment was mainly in agriculture and allied activities, whereas in western developed countries it was in the modern sector. Women in Bihar, in general, were socially backward, economically dependent, and politically less conscious than men. Education, a prerequisite for employment,

required to be ensured for women at all levels.

The major educational implication of the study is that education would bring about improvement in the status of working women and enable them to play the desired role in the gigantic task of nation building.

*313. SHARMA, G.D., *Resource Allocation on Education*, AIU, 1978

The objectives of the study were (i) to examine the amount of resources were allocated to education as a percentage of national gross product and, within education, to various levels, (ii) to study the pattern of allocation of resources to education by state governments, (iii) to study how this compared with state income, (iv) to examine whether allocation of resources on education by India were commensurate with the returns from investment in education, and (v) to study the ways the resources were allocated to education.

The statistical series of Ministry of Education of the Government of India and of international bodies like Unesco provided data. Data were analysed in descriptive forms and through the application of the regression equation technique.

The findings of the study were: 1. In 1971, the proportion of GNP spent on education by India was 2.5 per cent, in the US 6.7 per cent, the USSR 7.3 per cent. The number of persons in educational institutions in India were 79.8 million compared with 63.2 million in the USA and 62.3 million in the USSR. In terms of total population, India, the USA and USSR had 14.2, 25.68 and 30.9 per cent respectively. 2. During 1971-72, Manipur spent 10.71 per cent of its total SNDP, the highest among the states. It was followed by HP and Kerala with 5.63 and 5.31 per cent respectively. The smallest proportion (0.36 per cent) was spent by Jammu and Kashmir. 3. Seven states had a lower per capita income but their expenditure per student was comparatively higher. 4. Manipur spent the highest proportion of its SNDP (5.77 per cent) and Haryana the least (0.48 per cent) on primary education. More states spent more than one per cent of their SNDP on this level of education. 5. HP was proportionately the highest spender (3.20 per cent) on higher secondary education. The average of all the states worked out at 0.78 per cent. 6. Manipur spent the highest (0.79 per cent) on higher education. The average for all the states was 0.25 per cent. 7. Bihar spent 0.20 per cent of its SNDP on grants to universities and colleges. The average proportion of grants to their SNDP was 0.08 per cent. 8. The majority of states allocated 20–25 per cent of their total state budgets to education, but Bihar, Nagaland, Orissa, Haryana and J&K allocated less than 20 per cent. 9. The proportion of funds to total budget allocated by state governments had little relevance to per capita income. 10. In 1971-72 Delhi was the only Union territory to allocate 34.5 per cent of total budget for education. During 1975-76 the allocation rate increased to 43.2 per cent. The average of all territories increased to 28.7 per cent from 24.3 in 1971-72. 11. The share of higher education to total expenditure on education was around 10 to 14 per cent. This pattern changed slightly between 1971 and 1975. 12. The states which were economically backward paid a little more attention to higher education compared to the economically developed states. 13. The pay scales of teachers varied from state to state. In some states they varied between private and government-managed institutions. 14. No systematic planning in allocation of funds appeared to have been followed by the state governments. 15. Four variables, viz., state net domestic product (SNDP), state revenue income, state total income, and enrolment in higher education explained 62 per cent of the variation in the allocations of grants. The relationship between the enrolment variable and grants was found to be poor. No relationship was found between enrolment data and the grants from the UGC. 16 The method of grants adopted by the state governments differed from state to state. In some states it differed from university to university.

*314. SHARMA, G.D., and MRIDULA, *Economics of College Education, A Study of Hindu College, Delhi*, AIU. 1982

The objectives of the study were (i) to discuss the educational component, enrolment capacity and actual enrolment, quality of student intake, student–teacher ratio and lecture inputs in the Hindu College, (ii) to examine the unit cost of the college with reference to various subjects/faculties, and (iii) to examine the effectiveness of the institution in producing graduate, given the quality of student intake, resources spent on the teaching and learning process and the quantity and the quality of graduate output.

Data were collected for three years, 1973 to 1976. Accounts registers, budgets, admission registers, results and attendance/lecture registers were the major sources of data. Data were analysed in quantitative forms.

The major findings of the study were: 1. Hindu College is one of the oldest colleges in Delhi. Located in the

main campus area of the University of Delhi, it offers various combinations of subjects in the faculties of science, arts, and social sciences. 2. The college had always operated with a magnitude of under-utilisation of enrolment capacity which ranged from seven per cent to thirteen per cent. 3. The college admitted a fairly large number of students who had done well at their higher secondary level. 4. The student–teacher ratio for the college as a whole was almost 30:1. 5. The usual practice during 1973–76 was for each teacher to take three or four lectures per week in every faculty. The effectiveness of the teaching-learning process from this point of view was only a third of what it should have been. 6. The main component costs were: salaries of teaching and non-teaching staff, cost of library services, cost of student services, laboratory expenses and cost of maintenance and repairs. The percentage of total recurring expenditure to total budget was 88 to 98 per cent during 1973–76. 7. The per student cost on teachers' salaries was Rs 1095 to Rs 1541. The per lecture expenditure varied from Rs 88 to Rs 124. 8. The per student institutional cost varied from Rs 1,617 to Rs 2,258. 9 The average per unit cost for graduating a student for all courses/subjects (for three years duration) was around Rs 5,145. Among the general courses, the B.A. Pass course was relatively expensive. 10. In general, the quality of students admitted to the college was good. The rate of wastage among the students in this college was more than 50 per cent.

315. SINGH, L.I., *A Study of the Development and Some Problems of Higher Education in Manipur with special reference to Financing of Education since 1949*, Ph.D. Edu., NEHU, 1986

The specific objectives of the study were (i) to trace the development of higher education in Manipur since 1949, (ii) to identify and probe the vital problem areas like, (a) enrolment trends and, (b) patterns of expenditure, (iii) to analyse issues concerning the imbalances, if any in respect of development of higher education in different parts of Manipur state, (iv) to make a detailed analysis of the problems of financing of education in respect of (a) the total cost of higher education classified under the relevant institutional categories, (b) comparing the cost for different aspects of higher education such as salaries, laboratories, libraries, conduct of examinations, student amenities, etc., (c) comparing the investment of different agencies like the state government and the UGC in different aspects of higher education, and (v) to suggest policy changes in higher education on the basis of the findings of the study.

The historical method was employed. Data were collected from primary as well as secondary sources.

Some of the major findings were: 1. Higher education in Manipur started in 1946 and was still at the stage of infancy. There was clear progress in respect of various aspects of higher education like the establishment of new institutions, enrolment of students in colleges and postgraduate classes, number of teachers, etc. Research had been badly neglected. The expenditure on education had been increasing continuously during the past 33 years. 2. There was a 727 times increase in expenditure on higher education from 1949-50 to 1979-80. The state's expenditure on government and private colleges (arts and science) had increased. The UGC's grant to the colleges during 1960-61 to 1974-75 covered only 9 per cent of their expenses. The income as well as expenditure from 1971-72 to 1984-85 increased considerably. Adminstrative expenditure accounted for the bulk of university expenditure. Expenditure on furniture and equipment, building, examinations, student activities, etc. increased. The increase was minimum on libraries. There appeared to be a good deal of variation in expenditure on scholarships. 3. The overall problems of higher education were not much different from those in other parts of the country. The general tendencies, like mushrooming of institutions, ballooning of student enrolment and ever-increasing expenditure were seen. There were innumerable problems of higher education like unplanned growth of institutions, growth of educated unemployment, lack of infrastructure, imbalances arising in the course of expansion, improper budgeting systems, inadequate supply of teachers and non-availability of textbooks.

316. SINGH, V.J., *A Comparative Cost-effectiveness Study of 'Low-Cost' Audio-Visual Teaching Aids and 'High-Cost' Audio-Visual Teaching Aids*, Ph.D. Edu., JNU, 1984

The objective of the study was to analyse the cost and effectiveness of certain audio-visual aids.

In order to determine the cost and life of media the following classifications were made: (i) 'Low-Cost' audio-visual teaching aids included charts, pictures or pictorial charts. (ii) 'High-cost' audio-visual teaching aids included films, video and satellite television. To deter-

mine the cost of 'low-cost' media, a 27 items questionnaire was mailed to 68 reputed Indian publishers, of whom 52 responded. Similarly, the film projection cost was determined on the basis of responses collected through a questionnaire comprising seven items from four manufacturers of 16 mm, sound-film projectors. The cost of VCR including monitor was determined on the basis of responses received from various Indian manufacturers on a questionnaire comprising sixteen items. The data regarding cost and life of video systems, hardware as software, was obtained by mailing a questionnaire comprising 20 items to well manufacturers of VCRs. The data on satellite television involved various agencies. The technical and economic data were collected from as many sources as the number of major segments indicated below: (a) Cost of a Two-Satellite System, (b) T. V. Uplink, (c) Transmission Units, (d) Direct Reception Systems, (e) Programme Production, and (f) General Overall Coordination. Certain criteria, i.e. media-wise annual costs (fixed and operating cost) for the entire school stage, average cost per student-year, and average cost per student-lesson at four different rates of interest (0, 5, 10, 15 per cent) were used to compute the cost of these media.

The major findings were: 1. When the 'high-cost' media's coverage was extended to all schools in a country and at all the stages of school education, the so called 'high-cost' media turned out to be lower in cost than the conventional or old media like charts, pictures, etc. 2. If chart-teaching was extended on an all-India scale, it ceased to be a 'low-cost' teaching aid and the all-India average unit cost of teaching with charts was more than four times higher than video-teaching and nearly seven times higher than that of satellite television (at a zero rate of interest). 3. The chart-medium had no operating costs, while operating costs were quite heavy in the case of films and satellite television. The operating costs of films were higher than the initial capital costs at a zero rate of interest for a period of fifteen years and, in the case of satellite television, they nearly equalled its capital costs. 4. In the case of charts, the obsolescence rate was covered to a great extent without any addition to the unit cost, i.e. cost per student lesson. In the case of films the increase in unit cost ranged from 5 to 8 paise from primary to higher secondary for every lesson revised, whereas it did not affect video and ETV so adversely and, in the case of satellite television, it was negligible. 5. The most upsetting feature of the film-teaching system was the high cost of distribution through film lending libraries. 6. The unit costs for all the four media were uniformly lower at the secondary stage as compared to the other three stages of school education and this was due to the fact of higher average class strength at the secondary level as compared to the all-India average for other classes (73.7 students for secondary class and 25.3 and 24.3 students for primary and middle classes). 7. Although an average of 85.5 students per class was observed at the higher secondary classes, the diversification of courses resulted in a higher unit cost for all the media at this stage. 8. Because of the high unit cost of film-teaching, it was fast losing ground to video and satellite television. Video was emerging as a serious rival to film-teaching.

The implication of the study was that a nationwide coverage by educational television with possibilities of financing it internally, out of savings from within the existing educational structure, is sure to transform the face of the entire country.

317. TEWARI, M., *A Study of the Budget of Kumaun University from 1974 to 1982*, Ph.D. Edu., Kum. U., 1986

The investigation was designed to study the amount of grants received by the Kumaun University from various sources and its expenditure on different educational programmes. It also aimed at a critical examination of the suitability of expenditure on different faculties and at different levels.

Information about income from different sources and figures about expenditure on different faculties and at different levels within the faculties were collected from the universtiy records. Information was also collected about the number of students and teachers in the different faculties of the university.

The main findings of the study were: 1. There was no consistent and rational policy underlying fixation of priorities regarding expenditure under different headings. 2. There was lack of planned development of various programmes of education. 3. The number of teachers in the faculties of education and commerce had not increased in proportion to the increase in the number of students. 4. There was no qualitative improvement in education during the period under study. 5. Per student expenditure in the faculty of science was the highest. 6. Per student expenditure in the faculties of commerce and law was quite low. 7. Comparatively more research work had been done at Nainital than at Almora. 8. Greater attention had been paid to development of the campus at Nainital than of the campus at Almora.

318. YADAV, R.S., *A Critical Study of Financing of Secondary Education in Haryana*, Ph.D. Edu., Kur. U., 1985

The objectives of the study were (i) to study the policies, patterns, procedures and quantum of financing of secondary education, (ii) to study the priority accorded to secondary education vis-a-vis other sectors in the five year plans, (iii) to examine sources of income and items of expenditure in secondary schools of Haryana, and (iv) to make suggestions for streamlining the patterns, procedures and policies of financing of secondary schools of Haryana.

The data for the study were collected from a variety of sources like 347 secondary schools, offices of District Education Officers, the Directorate of Public Instruction of Haryana, the Ministry of Education (Government of Haryana), the Economic and Statistical Organisation, Planning Department (Government of Haryana), surverys conducted by National Council of Educational Research and Training, the Planning Commission, the then Ministry of Education and Culture (Government of India). The Haryana Education Code which included grants-in-aid rules, school recognition rules, pupil fund rules, building fund rules, the Punjab Primary Education Act, and the Haryana Aided Schools Rules were also examined critically. A questionnaire and a data schedule relating to patterns and procedures of government grants to institutions of secondary education, including certain policy issues, were prepared and administered. The questionnaire and data schedule were mailed to 621 secondary schools of three districts of Haryana. In addition, 60 questionnaires (20 in each district) were sent to distinguished educationists, economists, administrators and authorities concerned with financing of secondary education. The responses of 347 secondary schools and 50 educationists, economists, administrators and experts were received and analysed.

The findings of the study were: 1. After the formation of the state, the government had made all possible efforts for the expansion of educational facilities, but the absence of well-thought-out state policy and experience in formation of educational plans had resulted in haphazard expansion, causing inter-district imbalances in educational facilities at the secondary stage. 2. The contibution of private enterprise at secondary stage had been declining in quantitative terms. 3. The education of girls was a matter of great concern. 4. The education of scheduled castes was lagging behind. 5. The state was free from the backlog of trained teachers. 6. Haryana had been allocating a lower proportion of its revenue budget on education as compared with other Indian states. 7. The state ranked tenth in 1966–67; its position deteriorated and it ranked 15th in 1979–80 in terms of budgetary allocation to education. 8. Haryana had been far behind other states in terms of educational expenditure as a proportion to the per capita net domestic product. The states with lower per capita net domestic product than Haryana had been spending more per capita on education. 9. The expenditure on total general education and secondary education increased faster than the state's net domestic product. The expenditure on secondary education in terms of state's net domestic product indicated far more accelerated progress than on education as a whole. 10. There had been wide variations in the per capita and per student (direct) expenditure on total education and secondary education in Haryana. The districts which were spending more per capita on general education, were also spending more on secondary education. But the districts which had higher cost per student on overall education did not have the same position in respect of secondary education. 11. The ratio between recurring and non-recurring expenditure at secondary stage in 1966-67 was 88:12, by 1979-80 the ratio touched 98:2. 12. The proportion of expenditure on staff salaries and other items indicated that the state government had been providing increasingly higher outlays for teachers and other staff salaries in comparison with allotments for educational infrastructure like buildings, equipment and libraries. 13. The expenditure on scholarships and stipends had increased in absolute terms, but as a percentage to total recurring expenditure it had declined. 14. An analysis of the component of non-recurring expenditure had revealed that the expenditure on buildings had increased whereas that on equipment and libraries had been gradually declining. 15. The developmental expenditure on education as well as secondary education had always exceeded the outlays provided in the plans, except during the period of interregnum. 16. The first priority was accorded to elementary education in the plans. With the expansion of the base at the elementary stage, second priority in plans was accorded to secondary education, except in the fifth plan (1974–79) in which due to the establishment of the Maharishi Dayanand University, Rohtak, and the starting of new colleges, more funds were allocated to university education. The third priority had been accorded to university education. The next in priority were social and adult education, teacher educa-

tion, etc. 17. More than 90 per cent of the developmental expenditure had been spent on quantitative expansion and inadequate attention had been given to qualitative improvement of secondary education. The unit cost of expenditure in terms of per student expenditure had been higher on quantitative expansion than on qualitative improvement. 18. Ever since the formation of the state, considerable progress had been made in providing facilities and extending involvement at the secondary stage. But planning failed to vocationalize secondary education and to bring qualitative improvement to the desired extent. 19. The responsibility of the state government in regard to recurring income had gone up over the years while there had been a corresponding decline in the contribution from private sources like fees, endowments and other sources. In the case of non-recurring income, the share of government had declined, whereas that of endowments and other sources had increased considerably. 20. The long channels through which an application for grants had to pass delayed financial assistance to institutions of secondary education. 21. The deficit-grant system followed in the state dampened the enthusiasm of private bodies to raise their own resources. Further, the rules framed by the government lacked specificity.

ALSO SEE

1053. DASS, R.C., *Effectiveness of Teacher Training in Reducing Educational Wastage*, SIE, Assam, 1979
1607. GOGATE, S.B., *A Critical Study of the Availability of Scholarship and other Financial Facilities to Scheduled Caste Students in Marathwada*, IIE, Pune, 1985
1253. NIEPA, *Management of Utilization of Post-matric Scholarship Scheme: A National Study*, National Profile, New Delhi, 1986
1254. NIEPA, *Monitoring of Functioning of the Post-matric Scholarship Scheme*, National Profile, New Delhi, 1986
1255. NIEPA, *Post-matric Scholarship Scheme for Scheduled Castes and Scheduled Tribes: A Pilot Study*, NIEPA, New Delhi, 1986
1275. RAO, K.V., and MITTAL, J.P., *Indepth Study of the Governement of India Scheme of Scholarship in Approved Residential Secondary Schools*, NCERT, 1981
262. ROY, M.R., *Education as Concomitant Factor in Economic Development of Bangladesh (A Case Study)*, Ph.D. Edu., Pan. U., 1985
1375. RAJINDER SINGH, *Adult Education, Training and Productivity: A Study of Workers in Haryana*, Ph.D. Edu., Kur. U., 1987