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ABSTRACT

The Documentation Center has produced this annotated bibliography on education in India. Some of the many topics covered by the 394 Documents are: 1) educational administration and organization, policy and planning, the brain drain; 2) educational history, educational sociology, educational psychology, research; 3) curriculum, courses of study; 4) teaching methods, instructional materials and aids, general educational methods; 5) academic achievement, examination and evaluation, tests and measurement, student selection; 6) guidance and counseling, health care, physical education, literacy, special education, language problem, student discipline; 7) teacher education; and, 8) primary education, secondary education, higher education, adult education, vocational and technical education, women education, labor education. There are empirical studies included, however some are analytical or philosophical in nature. In addition, a special section is devoted to the economics of education. ED 041 683 and ED 043 437 are other documents in this series. (SBE)

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ACADEMIC ACHIEVEMENT

176 CHAWLA T R: Adjustment and academic achievement. Psychological Studies 1970, 15(1), 13-16. 8 ref.

Rotter's Incomplete Sentences Blank was administered to a sample of 301 male college students to find out their adjustment index. The students were rank ordered on the basis of their percentage of academic ranks obtained in the final examination for predicting academic achievement with adjustment index. The established groups were: Group I, 0 - 10 percent, Group II, 21-40 percent, Group III, 41-60 percent, Group IV, 61-80 percent and Group V, 80+ percent. The study revealed that the success of the first group cannot be predicted with adjustment. The academic achievement of other groups are closely related to adjustment. Lack of adjustment is one of the factors of the low academic achievement.

177 CHOPRA K: Measured intelligence and academic achievement as related to cultural atmosphere in the home. Progress of Education 1970, 44(9), 322-6. 4 ref.

To assess the influence of cultural atmosphere of the homes of pupils on their academic achievement, a study was conducted on 624 students of X class (age group 15 to 17 years) belonging to 6 urban and 2 rural Higher Secondary Schools in Lucknow district. Data were collected about parental education, help given by parents for studies at home, possession of books, magazines, newspaper and radio. The students' level of intelligence was gauged by administering Progressive Matrices Test as untimed capacity Test (Raven 1969) and their academic achievement was calculated on the basis of their marks in the high school first public examination. The students were grouped into 3 levels of cultural atmosphere, good, average and below average. The results indicated that the better educated parents take greater interest in their children's studies. Apart from this it was observed that there was a positive relationship between the level of father's education and the cultural atmosphere in the homes. Further, the

mean intelligence test scores and mean high school marks for the students coming from better cultural atmosphere were higher than those for the students coming from the comparatively inferior type of homes. Analysis of covariance showed that even when measured intelligence was held constant the difference in mean high school marks for the three cultural levels remained statistically significant. It is suggested that the state should offer social education to parents and provide library and reading room facilities in localities where poorer sections of the society live.

178 DEO P, SHARMA S: Self-concept and school achievement. Indian Educational Review 1970, 5(1), 100-5. 16 ref.

The study was conducted to find out the exact relationship between self-concept and school achievement. The sample consisted of 700 students (362 males and 338 females), randomly taken from the final year of 13 higher secondary schools randomly drawn from four States in India. The tool used was self-concept inventory based on Pratibha Deo's (1963) Personality Word List and standardised by Sharma (1967). It was found that subjects (Ss) with a very high self-concept as well as those with a very low self-concept were low achievers, compared to those who came in the middle. Further, it was observed that even though extreme self-concept groups did not differ significantly from each other, Ss with high positive self-concept achieved higher than the Ss with high negative self-concept. This analysis again suggested that there is a curvilinear relationship between self-concept and school achievement.

179 KRISHNA K P: Reading ability among high and low academic achievers. Psychological Studies 1970, 15(1), 46-9. 6 ref.

Four tests of reading ability namely reading speed test, Hindi vocabulary test, Hindi spelling test and academic inventory were administered to a sample of 200 unselected male students (Pre-University = 98, Degree I = 102) of the University of Patna and Magadh to compare reading ability among high and low academic achievers. In order to compare the differences, if any, between college and school samples, part of the data (N = 100) from the XIth special class were also used. The mean scores of the high and low achiever groups were compared by the application of t test. Result obtained from Reading Speed Test indicated that high achiever scored significantly higher than the low achiever at the XIth special level. At Pre-University and Degree I levels, the difference was not significant. On the rest of the three sub-tests the differences were significant between high and low achievers at all the three class levels except in the case of academic inventory, where the high and low achievers of Pre-University sample did not differ significantly.

180 GUPTA L D: Inspector goes round his vigil. Haryana Journal of Education 1970, 3(2), 16-21.

The drawbacks of the present inspection procedures have been discussed. The following main suggestions have been offered: 1) the supervisor should be aware of the deficiencies of the schools and the kind of relationship existing between the head of the institution and the other staff; 2) assessing teachers' work on the basis of the cumulative records of the students and the teachers and not on the sample check up for a few minutes; 3) adopting a suitable grading scale for the appraisal of the work of the teacher, similar to the one evolved in the State Institute of Education, Chandigarh, which allots different marks to different items of inspection; the final grade is given on the basis of total of all marks awarded to the different items after inspection; 4) writing the inspection report under separate sections - a) position of the school at the last inspection, b) progress made by the students and the teachers indicating the deficiencies not made up with reasons therefor, c) suggestions for the future action, d) guidelines for the professional growth of the teachers.

181 HASAN AHMAD S: Power structure in universities. Mainstream 1970, 8(40), 13-16, 34.

Replacement of permanent headship of a university department with headship by rotation from among the senior faculty members of the department for a fixed duration of two or three years has been advocated for democratisation of the university power structure. Periodic departmental conferences, collective guidance, right of teachers to communicate directly with university authorities instead of through the heads of the departments are among other aspects discussed.

182 JOHN V V: Affiliating university - the shape of its future. Times of India 15 June 1970, p.6, Cols. 3-5, 7. 1750 words.

The prevailing tensions in the affiliating universities have been discussed. Though an affiliating university with no teaching departments at the headquarters directly administered by itself may remove the present tensions, it may not be the best way of looking after the interests of students, nor of advancing the cause of the higher learning. The teaching departments of affiliating universi-

ties were intended to set the tone and pace of academic work in the colleges. Providing academic leadership and the way to improve the standards of affiliated colleges is to give them freedom to experiment and to innovate. The authorities of an affiliating university should function largely as an accreditation agency setting down norms and ensuring that all institutions follow them. Sharing of certain facilities like libraries, laboratories and recreational centres between the colleges in a particular city would promote a higher quality of academic life than the improvident establishment of a new university.

183 NICHOLS G E: Technology education, professionalism and organizational structure. University News 1970, 8(4), 13-18. 4 ref.

The national goal of accelerated economic development has resulted in large scale investments in modern educational facilities devoted to engineering and technology. Stress points have appeared where the need for a highly creative and professional orientation conflicts with the rigid administrative systems and authority embodied in traditional models of these institutions. Structural innovations can enhance the development of professional, academic and administrative leadership and can provide a better environment for creative participation by all elements of the educational establishment. First, an expanded upper management structure is needed which is composed of administrator-professionals or Deans to provide more coordinated supervision and integrative planning of key institutional functions. Second, leadership training can be provided in academic administration without sacrifice of professional accomplishment by rotational assignments of department heads and committee chairmen. Third, adequate delegation and decentralization of authority is required in order for administrators to be responsive to the network of higher authority created by an enhanced upper management structure. Fourth, organizational elements should be established to guide and encourage full student participation in institutional life and to provide channels of discussion with administration and faculty on the problems and concerns of the student community.

184 TRIVEDI S L: Composition of staff, a factor in school administration. Naya Shikshak (Teacher Today) 1970, 12(3), 69-76.

The importance of staff composition in the smooth and efficient management of the institution is pointed out. The following factors which affect the school administration are discussed: 1) the members of a particular community, being in the majority in the staff, dominating the school affairs; 2) the varying interests,

responsibilities etc. of staff members who are local persons and those who are from another city or village; 3) members of staff forming subject alliances such as science teachers and arts and humanities teachers forming separate groups; 4) the dichotomy between teachers of rural and urban backgrounds; 5) the indifference of senior teachers towards juniors; 6) the implications of an institution having a concentration of staff members whose interests, abilities and aptitudes lie in a single sphere i.e. either in classroom teaching or extra-curricular activities.

Student participation

185 DESAI D M: Student participation in university decision - making processes. NIE Journal 1970, 4(4), 5-9.

The existing provisions for student participation in decision-making in different universities, and various expert views on the problem have been pointed out. Between the two extreme views of the entire rejection and whole acceptance of students' involvement in the decision-making processes is a moderate view which concedes students' participation in decision-making through their representatives in extra-curricular activities. Though this view is more rational, and likely to be accepted in the present academic situation, ultimately the universities will have to accept the complete involvement of students in decision-making processes as the democratic urge of students cannot be blocked. Student participation should be conceded in a positive and democratic way, and not as a measure of corrective to student riots.

ADULT EDUCATION

186 GUPTA N R: Processes of adult learning. Indian Journal of Adult Education 1970, 31(6), 11-12, 14.

The need for adult education, specially that of a formal type, in the society itself, in the factory and even on the job while at work has been stressed. The following suggestions have been made: 1) creating in the adults the desire for learning; 2) helping them to build up self-confidence; 3) impressing upon them that they should accept new ideas; 4) associating the education programme with major social goals and adjusting the teaching methods to the needs and interests of the learners; 5) creating homogeneity of ideas and

experiences to make learning acceptable to the adults; 6) offering them different incentives to learn and freedom to participate in the learning process.

187 KHARA J S, RANJIT SINGH: Extension teaching methods and fertiliser use. Fertiliser News 1970, 15(4), 16-17. 4 ref.

Fourteen extension teaching methods falling under four broad groups, namely individual contact, group contact, mass contact and indirect contact, were studied on a group of 200 farmers in 20 villages in Punjab to find out the efficiency of these methods regarding farmers' way of learning fertilizer use. Indirect influence through neighbour got the highest score (20.4%) followed by result demonstration (15.9%) and farm and home visits (11.1%) respectively. The reasons for such high impact of indirect influence could be a high rate of illiteracy among the cultivators or that the farmer takes up a method only on seeing its performance under conditions similar to his own.

188 NAGAPPA T R: Preparation of a primer for functional literacy programme for farmers in Mysore. Indian Journal of Adult Education 1970, 31(4), 11-12, Cover III.

Describes in detail how the Kannada primer, designed by the Research Division of the Mysore State Adult Education Council for imparting functional literacy to the farmers of Gangavaty area helps them in scientific farming. The 30 lessons of the primer which are covered in a period of about 12 weeks, aim to develop the following abilities: a) to read with comprehension and fair ease a passage (printed in bold types) dealing with the agricultural operations of the area; b) to write short and simple letters to officers of the Block Development and fill in official forms; c) to make simple calculations involving agricultural activities and to make a statement of income and expenditure.

BRAIN DRAIN

189 MERRIAM M F: Brain drain study at IIT Kanpur. Manpower Journal 1969, 5(1), 52-82.

A questionnaire study was conducted among 225 faculty and senior staff at the Indian Institute of Technology, Kanpur (IIT K) the majority

of whom have had foreign training and experience. The following conclusions have been drawn: 1) an overwhelming majority of the sample feel that brain drain is not a serious problem for India and that it will disappear when progress is made; 2) the major causes of the brain drain are: a) better opportunity for using professional skill in the developed country; b) not enough suitable jobs in India; c) better standard of living in the developed country; 3) the most important reasons why Indians return to India from developed countries are a) desire to be a part of Indian development, national pride etc.; b) various family reasons and personal preferences; 4) the incentives which are effective in recruiting to IIT K are: 1) general favourable reputation, opportunity for research etc.; 2) academic freedom, flexibility, advancement opportunity, in a non-traditional university. The measures that would help in controlling brain drain are: a) recruiting directly from abroad without personal interview; b) b) restructuring existing institutions to give more freedom, opportunity and job satisfaction.

COURSES OF STUDY

190 Automobile engineering as a potential field for technical training. Transport and Communications 1970, 9(11), 5-7.

Describes how the automobile industry provides a ready-to-use training field which embraces all aspects of practical engineering. The student-trainee is made conversant with - mechanical, electrical, electronic, hydraulic and metallurgical engineering; supervisory functions; work of highly skilled, skilled, semi-skilled and even unskilled labour; many non-manufacturing aspects like sales and purchase, servicing etc.; and personnel problems. Though all the above conditions may be obtained in other industries as well, the potentiality of a training programme in the automobile industry is greater because of the nature of the product turned out and the importance it has in a developing country.

191 Education in electro-chemistry [Editorial]: Transactions of the SAEST 1970, 5(1), 1.

The need for improving the present state of education in electro-chemistry has been highlighted in the context of direct advances in electro-chemistry as well as in its related fields. Institution of a commission on education in electro-chemistry under the auspices

of SAEST (Society for Advancement of Electrochemical Science and Technology) to study the problem of introduction of suitable courses in electro-chemistry has been recommended as the first step in this direction.

192 INDIA. UNIVERSITY GRANTS COMMISSION: Statistics in Indian universities, report of the University Grants Commission Review Committee. Delhi, the Commission, 1970. 140p.

The review committee was appointed in 1967 for examining the existing facilities in the universities for teaching and research in statistics, both pure and applied, and to recommend steps for the improvement of the courses of study and promotion of research in the subject. The committee visited a number of university departments as well as Government industrial establishments which recruit statisticians, and held several meetings. The report of the committee and its recommendations have been given.

193 JAIN H K: Teaching of genetics in our universities. University News 1970, 8(6), 4, 5.

The following considerations should be kept in view in organizing the teaching of genetics: 1) it has expanded so much that it is now possible to teach it as a full-fledged subject; 2) at least some elements of genetics should be taught to all students of biology irrespective of the fields of specialization. These requirements can be best met if there are independent departments of genetics. In addition to providing flexibility in the system of allocating courses to the post-graduate students, the genetics departments can establish some links in the teaching of botany, zoology and other sciences and also provide opportunities for interaction of ideas both in research and teaching of biology, as they will draw their students mostly from other departments of life sciences.

194 PASSI B K: Maps are not the only important tools of geographical analysis. Haryana Journal of Education 1970, 3(2), 35-8.

The importance of applying statistical techniques in the study of geography wherever data are collected in numerical and quantitative terms has been illustrated with examples. It is nevertheless important that the researcher should not only have the capacity to understand the statistical tools but also their implications when applied to geographical problems. There has thus emerged a strongly felt need

to introduce a course of research methodology at the master's degree level. The outmoded topics in the syllabus of master's degree course should be replaced by new functional curriculum. The students can produce meaningful results out of their research projects only if they have an insight into the statistical analysis.

195 PRABHU G G: Professional training in mental retardation. Indian Journal of Mental Retardation 1969, 2(2), 98-107. 14 ref.

By examining t courses of study it is pointed out that the professional pe e - the general medical practitioner, pediatrician, neurologist, otolaryngologist, clinical psychologist, psychiatrist and medical social worker - who are likely to come in contact with the retarded in a clinical setting, are inadequately trained to deal with the problem. However, the occupational therapists and nurses who are to play anciliary roles have some elaborate training at graduate level. There is need to strengthen the various training programmes of the professionals, by making the programmes problem oriented and multidisciplinary in approach in order to enable the personnel to feel adequate in dealing with the retarded.

196 SHAH A M, AHLUWALIA A: Role of sociology in medical education and research. Economic and Political Weekly 1970, 5(17), 705-10. 7 ref.

The importance of training in the social sciences for the medical practitioner is generally conceded to. But, the various aspects of such a training have to be considered to decide whether social sciences could be merely added to the present medical curriculum, or a radical change in the medical education is required so as to achieve a new integration. It has also to be ascertained whether the social sciences in India are so developed that inclusion of the subject in medical curriculum would enable the medical practitioners to function more effectively. The content of social sciences introduced in medical education will vary according to the level of such education. It will also be necessary to work out the role of each of the different social sciences in medical education and research. The discussion, in this paper has been confined to the role of sociology.

197 SINHA B P, JAISWAL N K: Training in agriculture for extension officers. Kurukshetra 1970, 19(7), 2-6.

The main aim of the present study conducted on the final year students of Bihar Agricultural College, Sabour was to appraise their

theoretical and practical knowledge on which largely depends their effectiveness as Agricultural Extension Officers (AEOs). Keeping in view the job performance of AEOs, a questionnaire to consider six areas of competency, namely, 1) subject matter in agriculture, 2) social system, 3) programme planning and evaluation, 4) teaching methods, 5) organisation and administration, 6) basic concepts in extension, was administered to 60 students of whom 57 responded. The respondents attributed their low level of knowledge to a) inadequate field practical work done, b) inadequate attention and time devoted to the subjects included in the non-specialization group. Based on the findings of the study and suggestions made by the students, the following steps have been recommended to improve the undergraduate training: 1) making agricultural extension a compulsory subject, as majority of agricultural graduates are employed in extension service; 2) extending the period of its study to 3 years to give more time to practical classes; 3) holding the practical classes in villages; 4) giving more importance to practical classes; 5) giving two consecutive crop-season apprenticeship training at agricultural farms on completion of the undergraduate training; 6) giving apprenticeship training for a period of six months in a good Community Development Block after the training in farm.

198 SRIDHAR RAO B: On broad-basing medical education. Naya Shikshak (Teacher Today) 1970, 12(3), 27-30. 7 ref.

The existing drawbacks in the medical education have been pointed out and broad-basing the medical education by inclusion of social and behavioural sciences in the curriculum has been suggested as a remedy. The following measures have been recommended: 1) in student-selection, emphasis should be less on the candidate's past academic record and measurable intelligence and more on the extent of their general knowledge, talents, skills, hobbies, participation in extra-mural activities, etc.; 2) the medical college staff should receive refresher courses in social and behavioural sciences; 3) the time devoted to 'anatomy' and 'hospital-teaching' should be reduced and the time thus saved should be utilised for visiting patients and studying their family and social environment; 4) the students should be exposed to large number of books on literature, sciences, philosophy and humanities and frequent lectures by eminent persons in these fields should be arranged.

199 Teaching of textile technology at graduate level. Economic Times 7 June 1970, p.7, Cols. 1-2. 900 words.

Absence of integrated approach and quantitative theoretical treatment

of the subjects in the teaching of textile technology make the graduate in textile technology unfit for the industry inspite of the good coverage in the degree course of most subjects needed for his profession. It has therefore been suggested that - a) the teaching staff should have reasonable acquaintance with disciplines other than their own, b) the students should be given practical project assignments that require an integrated approach, c) the teaching staff should be associated with the staff of research institutions having experience in the use of an integrated quantitative approach in solving technical problems of the industry.

CURRICULUM

200. Basic vocabulary of Marathi-speaking primary school children. Indian Educational Review 1970, 5(1), 129-31.

The investigation was carried out on a sample of 8000 Marathi-speaking children studying in primary classes. The sample was divided into two age-groups of 6 to 8 years and 8 to 10 years. Different methods were used to identify the reproductive vocabulary of these groups. The recognition vocabulary list for these children was also prepared. The criterion of high frequency was used to prepare the basic vocabulary from the reproductive and recognition vocabulary. In addition, the basic vocabulary included some words which were widely used in children's literature. The basic vocabulary thus prepared contained 1135 words.

201 BHATIA R: New maths - revolution or farce? Hindustan Times 3 May 1970, p.7, Cols. 7-8; p.9, Cols. 5-6. 2500 words.

Besides the change in the subject matter, new mathematics aims at introducing the child to mathematical texts as exercises in logical thinking. The following comments have been made on the switch over to the new courses at schools: 1) most of the teachers seem to rely almost entirely on the lecture notes they take down during the summer schools, unprepared to answer students' offbeat questions; 2) unfair criticism of new mathematics by the public; 3) hostility of elderly teachers towards the young teachers interested in experimentation; 4) lack of credit to any original thinking of the student; 5) emphasis on book work; 6) absence of any form of continuity from school to university mathematics. The suggestions given are: 1) explaining the basic ideas in modern mathematics to the lay public through mass media; 2) arranging for mutual discussions between school teachers and university lecturers;

3) arranging lectures by university teachers to school boys in their final year; 4) making school children aware of the uses of mathematics in day-to-day affairs; its role in industry and in the problems of planning.

202 CEROVSKY J: Environmental education - an urgent challenge to mankind. School Science 1970, 8(1-2), 2-9.

Environmental education has been defined as that which aims at creating the correct approach of man to his (natural) environment in the sense of conservation, wise use and management. It has been discussed in detail how the environmental education should be carried out as an integrated education system for children, youth and adults. Such an integrated system will include formal education at all levels and out-of-school education and activities.

203 DORAISWAMI S, GALUSHIN V M: Conservation education in the new school syllabus in India. School Science 1969, 7(4), 256-61.

Describes two sets of curricular materials prepared, one by the Biology Group in the Department of Science Education of the National Council of Educational Research and Training (NCERT) for classes I to XI and the other by the Biology Study Groups set up by the NCERT. The NCERT lays emphasis on conservation of natural resources at several places in the biology syllabus. An environmental approach runs through the entire biology course for the middle school and there are special chapters on ecology for the high school. A summarized ecological perspective of the entire biology course is given in the last section of the middle school syllabus. The high school biology course comprises chapters like "populations", "ecosystems", "biosphere" and "conservation of nature". In the other variant syllabus prepared by the Study Groups for classes 5-10 emphasis is on the vast array of facts about the available resources and students are made to think through the enquiry approach how best to keep these intact. The high school syllabus gives importance to the various types of organisms.

204 GOPAL RAO D: Curriculum development for population education. Educational Forum 1970, 15(2), 1-5. 4 ref.

The social changes provide the necessary imperatives for curricular change. The curriculum change, now under way in India seems to

stem mainly from two factors - knowledge explosion and population explosion. Curriculum revision and development, especially in the context of contemplated introduction of population education, involves the following steps: 1) recognising the need for curriculum change; 2) mobilising for the change; 3) studying the problems and needs of the society; 4) studying the characteristics and needs of children; 5) formulation of educational objectives; 6) 6) selection of appropriate subject matter and activities; 7) organizing learning experience and planning units of study; 8) evaluating and launching the revised curriculum; the steps have been discussed in details.

205 MANAV R: Vidyalayoṁ meṁ kām-śikṣā kī yojanā (= Plan of sex education in schools). [Hindi]. Naya Shikshak (Teacher Today) 1970, 12(3), 66-9.

Stressing the need for sex education in schools, following suggestions have been made for the guidance of the teachers: 1) all students should be allowed to put any kind of questions on this subject, so as to clear their doubts and wrong notions; 2) answers should be in simple and precise language based on facts; 3) models, pictures etc. should be used for better clarification, wherever necessary; 4) no part of the body should be considered pious or impious. In view of the delicacy of the subject the heads of the institutions should depute well experienced teachers to teach this subject.

206 PIRE B G: Some aspects of science curriculum evaluation. Teaching 1970, 42(4), 108-12. 6 ref.

The three successive stages of curriculum development are - a) formulation and planning of broad policies on science education by educational philosophers and administrators, b) research into the design of a chosen curriculum area and the preparation of instructional materials by scientists and curriculum technicians, c) testing and introduction of the instructional materials in schools by teachers. Evaluation should form an integral part of the education in order to continually regenerate and modify the teaching strategy. Continuous evaluation and feedback should be fused with the intuitive extrapolation of present data to future trends. However, the main hindrance in the three-tiered process of curriculum development is the present communication barrier between the three levels.

207 ROY I K: Contemporary situation and curricular reform. Educational Miscellany 1968-69, 5(3-4), 19-32.

The various functions of education have been considered. The criteria of a curriculum which will be best suited to realise them have been defined in terms of experience and activity and it is observed that the methods of realising the curricular objectives will also have to be based on experience and activity. Curriculum must be of continuous development and reform. It is suggested to guard against the following difficulties in the way of proper execution of the curriculum reform: 1) lack of understanding and appreciation of the need for reform on the part of the general public; 2) inadequate teacher-preparation; 3) textbooks of indifferent quality; 4) inadequate supervision and an unimaginative administration; 5) inadequate finance.

208 RUHELA S P: National integration in India, sociological issues for teachers' consideration. Educational Miscellany 1968-69, 5(3-4), 45-50.

The political, economic and other cultural causes of social tensions threatening national unity have been discussed. It is suggested that the schools must ensure a safe and healthy social environment in which the children may internalise desirable values. 'Collective representations' through social celebrations, emblems, flags, slogans etc., and 'division of labour' are the two methods through which the solidarity of the nation can be strengthened. The educational institutions have to explore the possibilities through which they can employ both these methods to promote national integration. The teachers have to devise ways and means within the existing social and school set up to develop proper attitudes and values in the students.

EDUCATION : GENERAL

209 BHATT S R: Education from a logical point of view. Indian Educational Review 1970, 5(1), 114-26. 34 ref.

It is maintained that the language used by educators and educational researchers is often vague and confusing because of its 'open texture', abbreviations, compressions, ellipses, suppressed premises, and other such features. As a result, loose thinking and misleading concepts and assumptions slip in and faulty generalizations are accepted uncritically. Hence, the importance of logic in matters concerning education has been asserted. Logic can be

used in analysing the language of educational discourse and in determining the logical components of the educational process. It can also provide adequate research methodology, and norms and patterns of theory construction and concept formation, and can also help in giving a logical order to curriculum framing and educational measurements and assessments.

210 Gandhian values in Indian education. Quest in Education 1970, 7(2), 91-4.

A national seminar on Gandhian values in Indian education was held at Sevagram, Wardha, during February 1970. The recommendations of the seminar have been listed.

211 JOSHI A C: Educational aims in changing India. Tribune 26 April 1970, p.4, Cols. 3-6; 3 May 1970, p.4, Cols. 3-5; 10 May 1970, p.4, Cols. 3-6. 5900 words.

The main suggestions are: 1) building up a massive programme for the improvement of the common schools; 2) organizing special programmes for the gifted students; 3) conducting a survey of all the teacher education institutions and closing down the below-standard ones, and using the surplus capacity of other institutions for refresher courses for working teachers; 4) raising the period of teacher training, and revising the curriculum; 5) improvement in the selection and training of teachers being given the highest priority in the educational plans; 6) development of a school curriculum which includes modern concepts and understanding of the subject; 7) preparation of instructional materials like textbooks, teachers' guides/ manuals etc. based on the new curriculum; 8) introducing technology as a part of general education in schools from an early stage.

212 MEHTA H: Co-education - at what stages and why? Education Quarterly 1969, 21(1), 22-5.

Coeducation could solve many of the difficulties such as shortage of teachers, institutional facilities etc. But there exists a prejudice against it. The present trends in coeducation at all levels of education has been studied in the context of the recommendations of the Committee for the Differentiation of Curricula for Boys and Girls (1964) and the following observations have been made: 1) coeducation in pre-primary, primary, middle, junior

basic and senior basic schools is possible within a short time but secondary education has to spread in rural areas through separate institutions; 2) separate primary teachers' training schools would be preferable as most of such institutions would be in rural areas; 3) in the case of vocational and technical schools the number of separate institutions is on the increase while the percentage of girls in separate institutions as compared to girls in coeducational institutions is getting less and less; 4) separate adult education schools are needed for men and women; 5) coeducational institutions would be possible and economical with regard to education for handicapped children; 6) coeducation would be economical and efficient in the case of university education both general and professional; however, separate institution should be provided where necessary, in order to promote girls' education.

213 Outlay on education [Editorial]: National Herald 20 April 1970, p.5, cols. 1-2. 700 words.

The Education Ministry's concern over the meagre allocation of Rs.840 crores or 5.8% of the total outlay to education is justified in view of the importance of education is for national development. The decreased outlay will impede any vigorous drive to implement the national policy on education. Attention is drawn to the causes of wastage in education. It has been suggested that instead of providing free education to all school children, only poor children be given special facilities and others made to pay the fees. The move to set up pilot projects to cover fields of wastage and stagnation at the primary stage, girls' education, education of the socially handicapped and adult literacy, has been hailed.

214 RAO V K R V: Gandhian values in Indian education. Quest in Education 1970, 7(2), 53-9.

It is pleaded that the following Gandhian values should be incorporated in the Indian education: 1) truth and non-violence; 2) giving dignity to manual work; 3) attitudes of tolerance, mutual respect and mutual appreciation for the harmonious operation of the multi-religious and multi-lingual Indian society; 4) education as an instrument for the development of the whole personality; 5) identification with the poor and handicapped of the people; 6) recognition of the worth of human personality as such and the overcoming of emotional barriers to the development of a feeling of oneness of the human race.

215 BANERJEE C, DUTTA A, CHATTERJI S, MUKERJEE M: Investigation into the interest pattern of deaf children. Psychology Annual 1970, 4, 40-4. 8 ref.

Chatterji's Non-language Preference Record (CNPR) was administered to 100 deaf children, 62 boys and 38 girls of age range 14 to 18 years. To compare the means of scores of the deaf children with those of normal children, the means and standard deviations of scores of 200 normal children (age 12-16 years) presented in the supervisor's manual of CNPR were utilised. It was found that the interests of the deaf children are completely different from those of the normal children though these deaf children belong to the same socio-economic set up. A more stable pattern of interests of deaf and dumb children could be obtained by administering the inventory on a larger group. The availability of this interest pattern would help the counsellor at the time of guidance.

216 BAYTI J: Investigation into the leader behaviour characteristics of higher secondary school leavers. Educational Miscellany 1968-69, 5(3-4), 51-61. 15 ref.

A questionnaire prepared on the basis of Leader Behaviour Description Questionnaire (Hemphill and Coons), was administered to 200 students (boys and girls) of XI class to study their characteristics in nine dimensions of leadership. The following are the findings: 1) the students, as a whole, were better in the areas of communication, domination and membership than in other areas and were poor in integration, organization and recognition; 2) the girls were superior to the boys with regard to the dimensions of communication, initiation, integration, organization and production; 3) boys were superior to girls in the areas of recognition and representation; 4) in the areas of domination and membership, boys are a little superior to girls. The limitation of the study has been discussed and some suggestions for further research have been made.

217 BHAN R: Social factors in creative potentiality. Manas 1970, 17(1), 21-7. 6 ref.

The study was designed to find out the relationship, if any, between the creative potential and some of the social factors like intra-familial relationship, health, etc. Sixty six postgraduate students (age 20-28 years) were administered the Rorschach Psychodiagnostic

test to identify subjects with high creative potentiality and the subjects with low creative potentiality. A self-designed Non-Directive Interview Schedule was used to collect data regarding 1) the family history of the subject; 2) early development; 3) educational history; 4) emotional development; 5) aims and aspirations, etc. It was found that none of the social factors had significant relationship to creative potentiality. It has been concluded that the environment, however rich, healthy and stimulating, plays a very insignificant role in developing creative potential. Further, the study revealed that creative potentiality is insignificantly affected by adverse, unhealthy environment. It is maintained that heredity is the chief determinant of the creative potentiality.

218 BHUSHAN L I: Investigation into certain Personality correlates of leadership preference. Psychological Studies 1970, 15(1), 40-5. 22 ref.

A homogeneous sample, comprising 400 undergraduate male students belonging to middle and lower-middle income groups, was randomly drawn for the study. The Hindi versions of Allports' A - S (ascendance - submission) Reaction Study and Eysenck's Personality Inventory and Bhushan's LP Scale (Bhushan L I: Scale of leadership preference. Psychological Studies 1969, 14, 28-34) in Hindi, were administered in small groups of nearly 20 students each allowing every subject to take only one test a day. Significant positive Correlations were found between the LP - Scores and the scores on the A - S Reaction Study and Extraversion - scale, while the scores on the LP - scale and neuroticism scale yielded a negative correlation. On this basis, as also on the basis of comparisons of LP - scores of the extreme docile groups on each of the three personality variables, it is concluded that the subjects high in ascendance, extraversion and emotional stability preferred democratic leadership, while the submissive, introvert and neurotic subjects indicated their preference for authoritarian leadership.

219 BOSE U, SINHA S, CHATTERJI S, MUKERJEE M: Investigation into the interest patterns of the students in science, humanities and commerce streams at the higher secondary level. Journal of Psychological Researches 1970, 14(1), 14-21. 4 ref.

Chatterji's Non-language Preference Record was administered to 628 students (357 boys, 271 girls) of grade XI of 14 higher secondary schools of Calcutta to develop norms of different interests of the higher secondary students of different streams of study and to isolate the typical interest patterns for these groups. The analysis of

the data revealed that the interest patterns for all the groups were not identical and the pairwise comparison indicated that there was wide variation between the groups in this respect. Much similarity was observed between the interest patterns of the commerce and the humanities group. The interest patterns of science group were found to be very much different from that of the other groups. These similarities and dissimilarities among the interest patterns could provide adequate aid in a guidance situation. Using the higher secondary total marks obtained by these students as the criterion, three new scales of interest in humanities, commerce, and science streams of study are being developed.

220 DAVE P N: Achievement motivation and risk-taking in kindergarten children. Journal of Psychological Researches 1970, 14(1), 7-13. 9 ref.

The study undertaken to investigate the relationship between risk taking and n Achievement of children by using both Stanford - Binet Intelligence Test and the DOODLE test, revealed the following: 1) n Achievement and risk-taking are fairly developed in five-year old children; 2) the Stanford - Binet Intelligence Test is a fairly reliable and valid instrument for measuring achievement motivation in children; 3) children with high intelligence took more moderate risks than the children with low intelligence.

221 DEO P, BOWRY S: Relationship between LWA, intelligence and insight. Psychological studies 1970, 15(1), 1-7. 8 ref.

Kohs Blocks Designs Test was administered to a sample of sixty post-graduate students of the Punjab University, constituting 3 groups of 20 each (10 male, 10 female). The three groups represented the three levels of IQ - high, average and low. The three groups were compared on the LWA (Learning without awareness) task with respect to capacity to verbalise, number of words reached before verbalisation, LWA scores and LWA span. Results showed that the high IQ group differed significantly from the other two groups on all these aspects. It seems that superior intelligence not only brings earlier insight but also shortens the LWA span and affects the LWA scores also. The average and low groups did not differ significantly from each other.

222 DHAWAN I: Sociodrama and role playing in guidance. NIE Journal 1970, 4(5-6), 30-6. 6 ref.

It is observed that sociodrama and role playing can be used as a group guidance technique for students confronting difficult social and personal problems in their day to day life. The various steps involved in conducting role playing sessions are: 1) selection of real life adolescent problem; 2) warming up; 3) selection of participants; 4) preparing the group to observe role playing; 5) dramatization and 6) discussion of the performance. These steps have been described. The technique of role playing should not be overused. The age and other characteristics of the group, the group climate and its composition and the problems that the students are generally seized with are the factors to be considered while deciding when and how the technique has to be used. The counsellor should not be over-active as to deprive the group of opportunities for spontaneity and independence.

223 DIXIT R.C, SHARMA D D: Study of student-teacher relationship in terms of value incorporation. Journal of Psychological Researches 1970, 14(2), 57-63. 4 ref.

A scale of values developed in Hindi by Bhatnagar (1963) was administered to 100 subjects (50 males and 50 females) half of them high school students and the other half high school teachers. The following results were obtained: 1) the rank position of six values differs from group to group although no sex differences are found in the rank positions of teachers; 2) boys differ from girls on theoretical and religious values; 3) boys and girls differ significantly from their male and female teachers respectively on politcal and aesthetic values; 4) girls differ from male teachers on political, theoretical and aesthetic values and boys differ from female teachers on aesthetic value only.

224 DUTT N.K: Study of anxiety and some correlates. Journal of Psychological Researches 1970, 14(2), 50-2. 18 ref.

The study aims at finding out the intercorrelation among anxiety, ascendance-submission (A-S), escapist attitudes, religious attitudes, neuroticism (N), and extraversion (E). The following tests were administered to 243 randomly selected postgraduate students of Panjab University: 1) the Dutt Personality Inventory; 2) Allport's A-S Reaction Study adapted to Indian population; 3) Escapist Attitude Scale by Dutt; 4) Religious Attitude Scale by Dutt, 5) M.P.I adapted to Indian population by Dutt. The following conclusions were

drawn: 1) N has almost the same magnitude of correlations with A-S, E, religious attitudes and escapist attitudes as anxiety has; the correlation between N and anxiety is also very high; 2) E is unrelated to A-S reactions, N and anxiety; 3) E has a low and negative correlation with religious and escapist attitudes; 4) anxiety has a significant and negative correlation with A-S; it can be concluded that anxiety leads some people to submission; 5) anxiety has a marked correlation with escapist attitudes and religious attitudes; 6) the religious attitudes and escapist attitudes are highly correlated; 7) A-S has a significant and negative correlation with religious and escapist attitudes.

225 JAWA S: Creativity and orientation type. Psychology Annual 1970, 4, 45-8. 25 ref.

Pre-conscious Activity Scale developed by Holland and Baird (1968) was used to assess creativity. Orientation Inventory developed by Bass (1962) was used to assess the relative positions of the individuals on three scales of orientation, viz. 1) self-orientation; 2) interaction-orientation; 3) task orientation. The scales together with personal data schedule were administered to 61 undergraduates (age 17-21 years). The findings revealed that task-orientation is positively related to creativity, whereas interaction-orientation reveals inverse relationship. The correlation between measures of task-orientation and creativity was significant at 0.01 level. Further, the subjects were grouped as 'high' 'average' and 'low' creative and the examination of the amount of each type of orientation expressed by these groups in terms of means revealed that the subjects who are high creative seem to be more task-oriented, less self-oriented and still less interaction oriented.

226 KAUL L: Need structures of public and non-public school boys. Education and Psychology Review 1970, 10(2), 103-6. 10 ref.

Bhatnagar's Hindi version of Edwards Personal Preference Schedule (EPPS) was administered on 95 boys of Mayo College, Ajmer (a public school) and 120 randomly selected boys of four non-public higher secondary schools. The boys were in IX class and of age range 13-16 years. On the basis of the scores obtained on 15 needs of EPPS, means, SDs and t-values were computed to test the differences between the two groups. The means of need achievement, need dominance, need order, need exhibition, need change and need aggression were found to be significantly higher for public school boys and that of the need affiliation, need succourance and need endurance, significantly higher for non-public school boys.

227 KIRAN KUMARI: Sensory-motor learning in high and low anxious male and female undergraduates. Manas 1970, 17(1), 29-34. 8 ref.

The Taylor's Manifest Anxiety Scale was administered to 20 male and 20 female students (age 16-20 years) of Bhagalpur University and the two groups were further divided into high and low anxious groups. The four groups were tested against a sensory-motor task using star-pattern device. Final analysis took place in terms of their time in seconds, errors committed and trials taken using t-test. Analysis revealed that high anxious males and females do not take equal time in performing a sensory-motor task. Low anxious males and females do not exhibit similar reaction pattern. To some extent the low anxious females take more time in performing a sensory motor task than high anxious females whereas a reverse pattern is found in high and low anxious males. The study does not provide any definite conclusion except a basis for future research with sex and anxiety as variables.

228 MEHTA P H, JUNEJA S, ROHILA P K: Factors influencing choice of school subjects. NIE Journal 1970, 4(5-6), 53-62. 23 ref.

The research and other relevant literature in India and abroad suggest that subject choices of students are products of a number of factors. Among factors related to school, choices of subjects depend on their utility, easiness, availability in the school, interesting subject matter and activity involved, previous achievement and perceptions of success. Teachers also wield a strong influence. Socio-economic factors were no less important influencers. Parents' advice and the social prestige of the subjects acted as strong determinants. Factors like abilities, interests, etc., do play an important role. With regard to the methodology of the researches reviewed, it has been found that questionnaire method has been most frequently employed for data collection. Use of more sophisticated research designs, better tools of assessment and interview method has been suggested. It is also observed that theories of vocational choice can be usefully adopted for research on choice of subjects.

229 MISRA S L: Comparative study of religio-caste differences in concept formation ability of young adults. Psychology Annual 1970, 4, 10-12. 6 ref.

A sample of 288 students (age 14-19 years) equally representing Hindu and Muslim religions was chosen for the study. Six Hindu castes, namely Brahmin, Vashya, Rajput, Khatri, Kayasth and

Schedule, each having 24 students represented the Hindu community, Shia and Sunni each having 72 students represented Muslim community. Lovell's concept formation Test and Trist Hargreave's concept Formation Test were administered. The following results were obtained: 1) on both the tests Muslim students scored higher than Hindu students which show the superiority of Muslim students; 2) the schedule caste emerged to be possessing the lowest concept formation ability significantly differing from other Hindu castes; 3) Shia and Sunni sects did not differ from each other on both the tests.

230 OJHA H: Experimental study of prestige suggestion in female extraverts and introverts. Manas 1970, 17(1), 1-5. 11 ref.

The Maudsley Personality Inventory was administered to 200 female undergraduates. On the basis of their scores on this test, two distinct groups, each consisting of 50 subjects were formed. The prestige suggestion experiment was conducted in three sessions: 1) all subjects of the two groups ranked 12 slogans of national significance; 2) the subjects ranked 12 names of leaders; 3) the subjects ranked the same 12 slogans paired with the names of leaders. The results showed that extravert females yield more to the influence of prestige suggestion than introverts.

231 PALSANE M N: Health and parental education in personal adjustment. Psychological Studies 1970, 15(1), 55-8. 2 ref.

The hypothesis that both health and parental education are positively correlated with the overall adjustment of an individual has been studied. The first factor has proved to be associated with personal adjustment, while the role of the second factor, though positive, appears less conclusive.

232 PRATAP SINGH U, SYED NEHAL AKTHAR: Children's Apperception Test in the study of orphans. Psychology Annual 1970, 4, 1-6. 12 ref.

An attempt has been made to see how the children's Apperception Test (CAT) pictures stimulate the imagination of the orphans and give out clues to specific areas of potential conflict of motivational importance. 24 orphan boys (age 6-10 years) were administered Choudary's Indian adaptation of Bellack's CAT (10 pictures). The total of 240 stories were analysed according to Bellak's scheme. The results led to the conclusion that in general the personality

of an orphan is critical, aggressive, full of anxieties and conflicts which hamper his creative and imaginative faculty. He develops aggression and hostile attitudes towards authority. Though the ego remains integrated, the super-ego is very severe.

233 RAINA M K: Creativity research and its implications. Educational Miscellany 1968-69, 5(3-4), 1-18. 60 ref.

Creativity is defined and its relationship with intelligence, academic achievement and personality as revealed by research studies have been discussed. It is observed that the prevailing educational system is not conducive to promoting creativity. For developing and identifying creative talents, the teacher himself has to be creative, otherwise, there is a danger of mistaking creativity for abnormality. Creativity research has a considerable significance for bringing improvement in the textbooks and methods of instruction. It also points to some modifications in the teacher selection and retention programmes.

234 RAINA M K: Study of creativity in teachers. Psychological Studies 1970, 15(1), 28-33. 23 ref.

The non-verbal form of the Torrance Test of Creative Thinking was administered to a sample of 55 student-teachers (30 male + 25 female) of age ranging between 25 and 48, to find out the sex differences among the teachers in creative thinking ability and to determine whether such variables as age and experience were related to creativity. Using t-ratio to test the significance of the mean differences between male and female teachers on the various dimensions and total creativity, it was found that though females scored higher than the males except on the originality factor, the difference between the means except in originality was not significant. The correlation between fluency and age was negative and insignificant between flexibility and age it was positive but not significant, between elaboration and age positive and significant at 5%; and between total creativity and age it was positive and significant at 5% level. The co-efficient of correlation between years of experience and fluency, and flexibility, is minus but not significant, and with rest of the two factors and total creativity it is positive but in no case significant.

235 RAINA T N: Comparison of personality attributes of high and low authoritarian student teachers. Journal of Psychological Researches 1970, 14(2), 43-9. 11 ref.

One hundred male B.Ed students (age 20-45 years) of same socio-economic status, were administered the F scale (a measure of antidemocratic potential) of Adorno et al. Those who scored in the upper fourth on the F-Scale were included in the high authoritarian group and those in the lower fourth, in the low authoritarian group. The Edwards PPS was earlier administered to these subjects. The high authoritarian group had significantly higher mean scores than the low authoritarian group on the need indicies for deference, order, succorance abasement and aggression. The low authoritarian group showed significantly higher need indicies for achievement, autonomy, intraception, change and heterosexuality. No group differences were found on the need indicies of exhibition, affiliation, dominance, nurturance and endurance. This lent support to the main hypothesis that a significant relationship existed between the extent of authoritarianism and the personality need structure.

236 SHANTHAMANI V S: Relationship between intelligence and certain other variables. Journal of Psychological Researches 1970, 14(1), 28-34. 6 ref.

Alexander's Battery of Performance Test was administered to 300 girl students and of grade VIII, IX and X, 100 in each grade for the study. Results indicated that the following factors have positive influence upon intelligence: 1) optional subject; 2) sibling status; 3) professional, agricultural and managerial occupation and economic status of parents and 4) caste. Educational qualification of the fathers and single or joint family system have no influence on the intelligence of children. The effect of rural and urban environment on intelligence is of minor significance.

237 SINGH N P: Concept of 'self' in modern psychology. Indian Educational Review 1970, 5(1), 84-99. 52 ref.

The history of the concept of 'self' during the development of psychological theory over the past hundred years is traced and it is shown how this concept has gradually come to be accepted. The meaning given to this concept by various psychologists, the psychological process of self-development, and some of the methods and techniques recently developed for the study of the 'self' are discussed.

238 SINHA R C: Attitude of students toward worldmindedness. Journal of Psychological Researches 1970, 14(1), 22-7. 9 ref.

200 students of Patna University, 100 undergraduate (50 male, 50 female) and 100 postgraduate (50 male, 50 female), were subjected to the study. The world-minded attitude test developed by Sampson and Smith was used. The test covered eight issues of high repute, viz, religion, immigration, government, economics, patriotism, race, education and war. The results of the study showed that on an average the students are pro-worldminded. The females are more worldminded than the males. There is an increase in worldminded attitude score from the freshmen to the seniors. The mature and advanced girl students have better scores in comparison to similar boy students. The urban students are more worldminded than their rural counterparts. The world-mindedness of students is hardly influenced by their parents' occupation. Students have got highest pro-worldminded attitude toward education, followed by race and economics. They are almost anti-worldminded toward religion and patriotism and neutral to other issues.

239 SINHA R M P: Perceptual judgements of dependence prone persons in presence and absence of external cues. Manas 1970, 17(1), 41-7. 6 ref.

The Dependence Prone (DP) Scale (Sinha, 1968) was administered to 200 male students of Gaya College. On the basis of the scores high on DP (N=30) and low on DP (N=30) group of students were selected. These subjects were individually contacted and their perception of time for 5 sec. and 10 sec. in random order was taken. The subjects were administered Muller - Lyre Illusion Test. Feather line with 50 m.m. was kept as standard. Five trials were given. On the basis of the results the following conclusions were drawn: 1) when external cues are absolutely missing the perception of high DP subjects do not vary in a significant way; 2) although there exists a mild tendency in high DP to overestimate the temporal intervals, when different external cues are available, high DP subjects are greatly influenced by those cues, whereas the low DP subjects may or may not be influenced by the cues depending on their relative positions in the perceptual field.

240 TRIPATHI R B: Influence of sex difference on test scores. Journal of Psychological Researches 1970, 14(2), 53-6. 11 ref.

It was assumed that in non-verbal test of general mental ability (Joshi & Tripathi, 1966), the scores will not be biased in favour of either sex. To verify this assumption, the test was administered to 250 girls and 525 boys of grades III to VIII drawn by incidental - purposive sampling technique. The subjects belonged to lower middle socio-economic level. The results indicated that there was no real difference in the mean test scores of girls and boys at different age levels. This characteristic expands the area of applications of this test on children of both the sexes.

EDUCATIONAL RESEARCH

241 ADAVAL S B: Inter-disciplinary approach in educational research. (In Educational research, an interdisciplinary approach, report of a seminar. Delhi, Central Institute of Education, 1969. 38-49).

It is pointed out that there could be three approaches to educational research, namely, intra-disciplinary, trans-disciplinary, inter-disciplinary. These have been defined and discussed. Also, the implications of inter-disciplinary approach in educational research in a developing society have been discussed. With regard to priorities in educational research, the problems, it is observed, could be divided into 4 categories: 1) training and education of manpower for increased productivity; 2) mass education; 3) coordination and integration of educational programmes for their smooth, effective vertical and horizontal growth; 4) teaching personnel.

242 AHLUWALIA S P: Educational research in India - a bird's eye-view. Quest in Education 1970, 7(2), 70-5. 4 ref.

The history of educational research in India is barely of 30 years. Bombay University instituted new courses in educational research in the late thirties. By 1947 only five universities had instituted degrees in educational research. After Independence the Government of India established a number of specialised institutions during the first and second Five Year Plans for conducting and promoting research. In 1961 the National Council of Educational Research and Training (NCERT) was set up. The educational research done/

being done in the country can be classified into 1) those done by degree seekers; 2) those done independently by staff of training colleges and universities; 3) those undertaken through government and other grants-in-aid; 4) those done by voluntary and professional organizations of teachers, etc. 5) those done by organizations of Central and State Government. Educational research in the country is a post-independence phenomenon and the Indian universities contribute substantially to the quantity of research.

243 DUTT S: Educational research, an inter-disciplinary approach. (In Educational research, an interdisciplinary approach, report of a seminar. Delhi, Central Institute of Education, 1969. 50-60).

The necessity to have an interdisciplinary approach in educational research is stressed. That such an approach had not been adopted in the majority of the research projects, may be due to 1) borrowing of research results from other countries and to 2) the fact that colleges and Departments of education are the only sponsoring agency of such projects. It is maintained that the following four areas needed greater attention with inter-disciplinary support: 1) social factors affecting the vocational development of Indian boys and girls; 2) impact of education on the under-privileged children at all levels of school; 3) study of school as a social institution; 4) study of teachers under the following subheads: a) teacher as a socialising agent in the classroom, b) social role of the teachers, c) social origin of teachers, d) teaching as a career.

244 MEHROTRA R N: Bird's eye view of educational research in India during 1939-66. (In Educational research, an interdisciplinary approach, report of a seminar. Delhi, Central Institute of Education, 1969. 61-72).

An analysis of dissertations and theses submitted for M.Ed, Ph.D, and D.Litt. degrees of various Indian universities, has led to the following observations: 1) very little conscious effort seems to have been made for doing research by bringing together a number of disciplines; a deep inter-disciplinary research thesis is rare; 2) the few researchers who are primarily involved in disciplines other than education do not have the background of a study of education; 3) among the disciplines which have been brought to bear on educational research, psychology has been the most predominant, the others arranged in order of the amount of their influence are a) history, b) philosophy, c) economics, d) political science,

e) law; 4) application of elementary statistics has been made very widely; 5) much of the research work pertains to areas such as measurement, evaluation, guidance, educational administration, Basic education.

EDUCATIONAL SOCIOLOGY

245 CASPERSZ P: Sociology of education. Teaching 1970, 42(4), 121-5.

The social character of education and the need for analytic sociological scrutiny in secondary schools in view of the adolescent nature of the students have been pointed out. The following suggestions have been offered for the working teachers: 1) seeking a consensus on the goals of education in general and specifically on the goals of their own schools; 2) analysing the school as an on-going social system; 3) reflecting on the attitudes of the pupils and on measures that may be taken to render these attitudes more functional towards goal-attainment; 4) apprising the relationship, actually existing or potential, between the school and the pupils' home and environmental backgrounds; 5) carrying out the teaching task in the whole context of the nation and of the contemporary world.

246 SHARMA A: Understanding social and emotional climate of the classroom. NIE Journal 1970, 4(5-6), 5-13.

The academic, emotional and social development of a student is affected by the position he holds among his classmates; hence the need for the teacher's concern for understanding the social-emotional climate of the classroom. The sociometric technique is a simple, easy and accurate device for understanding social - emotional climate of the classroom. In its administration, it requires individuals to choose a given number of associates for some group situation or activity. In analysing the sociometric data, the first step is usually the tabulation of results in matrix table. For most classroom purposes, the data in the matrix table are converted into sociogram which is a graphic presentation of the underlying social structure of a group. The sociogram is useful for identifying the students who need attention for their better social - emotional development as also for improving social-emotional climate of the classroom.

EXAMINATION AND EVALUATION

247 AGARWAL L N, RASTOGI K G: Aspects of oral expression to be tested through oral examination. Educational Forum 1970, 15(2), 9-23.

A scheme of evaluation of oral expression as worked out by the Central Board of Secondary Education, Delhi, has been given. The aspects of oral expression to be tested are: 1) pronunciation, 2) grammatically correct language; 3) vocabulary and usage; 4) delivery; 5) thought content and its organization; 6) effect; 7) manners and gestures. Further specifications of these aspects and the criteria against which they are to be assessed have been described. The rating scales and their definitions and instructions to the examiners have also been given.

248 BHATTACHARYYA K P: Comparative study of scoring errors in counting number of omissions and right answers and one and two sided answer-sheet prints. Psychological Studies 1970, 15(1), 23-7, 2 ref.

Five psychometric tests were administered to a sample of nearly 2000 candidates to test 2 hypotheses: 1) whether scoring error in counting the number of right answers and omissions increases when the answer-sheets are printed on both the sides of a page and 2) whether scoring error is greater in counting the number of omissions (unanswered items) than in counting the number of right answers, enumerated with the aid of a scoring key. Double-sided answer - sheets were used for the first four tests, making a coupling of two tests on a single sheet of paper, and one - sided answer-sheet was used for the fifth test. The first hypo thesis was rejected on Chi-square test ($P > .30$), while for the second hypothesis it was found that scoring error in counting the number of omissions was significantly greater ($P < .01$) than that of the right answers. Only in one case p was less than .05. Some improvements are suggested for minimising the scoring error when the answer-sheets are hand-scored.

249 Eleven recommendations to rationalise secondary exams [News Item]. Tribune 25 June 1970, p.5, Cols. 5-6. 900 words.

The two-fold purpose of the 11 unanimous recommendations made by the two-day conference of Chairmen and Secretaries of Boards of Secondary Education in India has been: 1) to improve the standard

of education; 2) to introduce liberalization to help weak students so that wastage at the school leaving stage is reduced. The main recommendations are: 1) raising the minimum pass marks in a subject from the existing 33% to 40% but declaring a student passed if he secures at least 40% in all the subjects except one and an aggregate of 35%; 2) declaring those who fail in one or two subjects without securing an aggregate of 35% as compartmental; 3) enabling the desirous students to improve their division by appearing in subsequent examinations; 4) placing those securing a minimum of 60, 50, and 35% in the aggregate in the first, second and third divisions respectively and declaring those obtaining 75% or more in any subjects as passed with distinction in that subject; 5) permitting students to clear the subjects in parts spread over two years at the high school, higher secondary, intermediate, and pre-university/pre-degree stage if it is of two years duration.

250 KELKAR S V, CHAUDHARI R T: Mastery of fifth standard pupils over the primary addition facts, an investigation. Progress of Education 1970, 44(7), 252-5; 44(8), 297-300; 44(9), 331-4. 6 ref.

Washburne's Primary-Addition-Facts Test was administered to 125 V standard students. The following tentative conclusions were drawn: 1) hardly 2% of the pupils have achieved mastery over the 100 primary addition facts; 2) nearly 34% of pupils can correctly reproduce all the facts of addition, if no time limit is given; 3) about 3% of the pupils make automatic responses in respect of all the facts while the rest of them make some calculations before arriving at their answers; 4) purposeful and sustained practice will enable 95% of the pupils to attain the minimum standard laid down by Washburne; 5) about 55% of errors are of the three types, namely: 1) errors concerning zero fact; 2) errors in which the correct answer exceeds the pupils' answer by 1 and 3) vice versa.

251 MAHAJANI G S: Examination reform. University News 1970, 8(5), 14-16.

The defects of the external examination system and the system of internal grading have been enumerated. It is advocated that a system should be evolved which will combine the merits of both the systems and yet avoid their defects. The following suggestions have been made: 1) the syllabuses should be carefully prepared by relevant Boards of Studies; the syllabuses should be inter-disciplinary in approach so as to reflect unity of knowledge; 2) internal grading with periodical tests throughout the course

should be followed at the end by a comprehensive external examination; 3) grades A, B, C, etc. should be given instead of marks to measure the performances; 4) there should be four examinations - final, pre-final, terminal, pre-terminal - equally spaced in a year with 50%, 15%, 20% and 15% marks respectively; 5) all answer-books of the tests, except the final one, should be shown to the students; 6) a statistical cell for examinations should be set up in universities.

252 NAYAK K P: Internal assessment. Journal of the College of Education, Karnatak University 1970, 7(1), 10-14.

Pupils' progress in scholastic and non-scholastic areas are to be assessed and since external assessment procedures are inadequate for this, internal assessment which can cover all aspects, is necessary. Scholastic areas such as abilities, skills and interests in different disciplines, and non-scholastic areas such as leadership, resourcefulness, sociability, cooperativeness, industry, perseverance, etc. which can be assessed internally have been listed. The need to maintain cumulative records is stressed. It is pointed out that the following factors have to be kept in view in evolving a valid scheme for internal assessment: 1) the items to be considered for assessment in each of the school disciplines and various aspects of personality; 2) the number of assessment and their periodical distribution; 3) the proportionate weightage to each of these assessments; 4) tools needed for such assessment and question of designing such evaluation tools; 5) scoring procedures for such items that are to be included; 6) determining the relative role of internal and external tests in the total assessment programme.

253 RAY S K: Reform of the examination system. Swarajya 1970, 14(45), 11-12.

The following suggestions have been offered for reform of the examination system: a) teacher-given examinations, assignments, discussions, debates, seminars, tutorials, should replace one big external examination; b) students should be encouraged to make independent study and trained to take advantage of library, laboratory and other facilities; c) change in the educational system, the curriculum and the methods of teaching are required; text books may be partially replaced by programmed learning; d) learning-by-doing techniques should as far as possible be the foundation of education and greater stress should be laid on practical training instead of emphasising examination; e) students should be helped to select those fields of study which are needed by the economy of the country.

254 BHATNAGAR A: Manpower and guidance. NIE Journal 1970, 4(5-6), 20-3.

It is pointed out that the ignorance on the part of individuals about the occupational information and thorough knowledge of the self is an important cause contributing towards the imbalance of manpower supply and demand. Hence there is strong need to provide guidance to individuals to enable them to make prudent decisions. At the elementary stage, the pupils should be provided with the necessary information about the world of work. At the secondary stage which is crucial, the counsellor should match the pupils's qualities and characteristics with the occupational requirements so as to provide proper educational and vocational guidance. For this, it is necessary that different problems of manpower are studied in an analytical framework. Every university should have an employment bureaux to provide vocational guidance to graduates. Besides these, there should be on-the-job guidance in the form of vocational guidance or motivational counselling to enable proper, and optimum utilization of the manpower. In a democratic society guidance should be non-directive.

255 BHATNAGAR U: Nirdeśan kārya mem mata pita va jan sādhāran kā yog (= Role of parents and common men in guidance work) [Hindi]. Naya Shikshak (Teacher Today) 1970, 12(3), 39-43.

With regard to shortage of guidance personnel it is suggested that the following measures can be taken to involve parents and others in guidance work: a) they should be made aware of the importance and nature of guidance work in schools; b) the importance of guidance should be propagated through various communication media; c) parent-teacher association should be established in schools and parents should be invited to learn about guidance; the extent to which parents can guide their children has been outlined; d) school authorities should respect parents and their suggestions and look to the conveniences of the parents.

256 BHATNAGAR U: Trends in career teaching. NIE Journal 1970, 4(5-6), 66-70.

The objective of the programme of teaching of occupations at the middle stage is to enable children develop broad educational and vocational plans; at the secondary stage, the children should be provided the necessary information to narrow down their choices. The following methods and techniques used for career teaching have been elaborated: 1) talks by experts or career master; 2) small group conferences; 3) celebration of career days; 4) interview of persons belonging to different occupations; 5) follow-up of former students; 6) survey of advertisements for jobs; 7) visit to work spots; 8) teaching through curricula; 9) using audio-visual methods; 10) intensive study about specific vocations; 11) work experience through actual participation under real life situation. The points to be kept in view with regard to the content, methods, personnel, material etc., while introducing career teaching, have been given.

257 DESAI K G: Guidance for reducing wastage in education. NIE Journal 1970, 4(5-6), 63-5. 7 ref.

The following suggestions have been given with regard to guidance service at the different stages of education: 1) counselling service for parents, health service, educational guidance for slow learners and underachievers should be provided at the primary stage; 2) guidance to choose appropriate vocational and academic courses, to maintain healthy social relations and to develop personality, counselling to parents, pupil personal service to maintain regular attendance, and a career information centre, should all be available at the secondary stage; an employment service for procuring part-time jobs for the needy should also be provided; 3) a career guidance service, student personnel service and employment service should be set up in all colleges.

258 DUTT S: Guidance and vocationalization of education, a plea for a plan of action. NIE Journal 1970, 4(5-6), 71-9.

The various aspects of an effective school guidance programme, the necessary steps to be taken to stimulate such a programme and the phased manner in which such steps could be undertaken have been elaborated. A plan for vocational guidance in school and the various agencies whose cooperation is required in this respect have been described. Vocational guidance for employed adolescents and unemployed youths has also been suggested. The

other aspects discussed are: 1) the need for a phased programme of vocational guidance; 2) guidance budget, 3) evaluation of the guidance programme, etc. It is observed that for a successful vocational education programme, the prerequisite is an effective school guidance system which includes vocational guidance.

259 RAGHURAM SINGH M: Profile of polytechnic student. Technical Teacher 1970, 4, 16-22.

The main findings of a survey of the academic background, the family and socio-economic background, the academic learning problems, the interests and activities in the co-curricular field and the vocational aspirations of 100 students drawn from 15 polytechnic institutes in Mysore State, Andhra Pradesh and Tamil Nadu are: 1) many students have a general education background that is higher than the prescribed entry qualification; 2) there is a positive inter-correlation between their S.S.C. scores and recent polytechnic scores; 3) most of the students belong to families of low income and do not get tutorial guidance from their family members; 4) almost all of them propose to seek jobs in public and private sectors. The following suggestions have been offered: 1) improving the teacher-pupil contacts and providing more individual guidance; 2) better utilization of library material by the students; 3) revitalizing the co-curricular programmes; 4) undertaking surveys, interviews and visits to students' homes, by the teachers.

260 RAO N C S: Adjustment problems of adolescence. NIE Journal 1970, 4(5-6), 14-19. 11 ref.

The survey of adolescents' problems conducted by the College of Educational Psychology and Guidance, Jabalpur (1958), on 1551 adolescents studying in classes IX to XI revealed that besides scholastic and economic problems the adolescents' needs predominantly lie in the area of healthy emotional and social relationships with adults and peer group. The study of the behaviour problems of adolescents, conducted by the Government College of Education, Bilaspur (1969), found that social deviancy pattern of behaviour was most frequent. In understanding and evaluating symptoms of problem behaviour the following aspects are important: 1) the problem behaviour arises out of a multiplicity of factors; 2) there is need to study the individual case history; 3) the symptoms should be weighed and their proportion to the assumed or known causes considered. In interpreting problem behaviour, an understanding of motivational dynamics is also necessary. The group guidance and the dissemination of occupational and

educational information, important as they are, have to be supplemented by organised individual counselling and case work. The counsellors should make use of both the directive and non-directive methods of counselling as the situation demands.

HEALTH CARE

261 SOKKIAH N J, KULANDAIVEL : Study to establish height and weight norms of high school boys in Coimbatore District. Journal of Educational Research and Extension 1970, 6(4), 157-65.

The study has attempted to establish the height, weight and chest measurement norms of high school boys in Coimbatore District. A representative stratified sample of 1593 boys has been studied to establish the norms for the age groups 13 to 18. It is found that there is no significant difference between the norms of vegetarian and non-vegetarian boys. Generally there is a trend for the mean height, weight and chest measurements to increase with increasing economic status.

HIGHER EDUCATION

262 ACHARLU K S: Gandhian educational thinking, relevance to university education. Quest in Education 1970, 7(2), 76-86.

It is suggested that the university education should be oriented to incorporate the following Gandhian ideas: 1) truth and non-violence; 2) curriculum to be intimately related to the social, political and economic life of the community; 3) giving due importance to the study of humanities; 4) work experience; 5) developing colleges as realfunctioning communities with opportunities to students to participate; 6) participating in meaningful programmes of community service; 7) imparting religious education to students; 8) creating an environment of freedom for the teachers and the students.

263 AIRAN J W: University, colleges, the State Government and the UGC, a point of view. Quest in Education 1970, 7(2), 87-90.

The need for a responsible relationship between the State and the various agencies set up to fulfil the educational task, has been stressed. The following observations have been made: 1) the State should be guided basically by the educational and national objectives; 2) it is desirable that the State itself does not conduct any institution directly in implementing the State policy on education; 3) the duty of the State would be to make the necessary funds available for the development of the educational apparatus and for the maintenance of standards; 4) the university is the apparatus for the purpose; 5) the concern of the university will b development of the mind of man, it will also be concerned with technical and technological developments; 6) the colleges should be looked upon by the university as equal partners in fulfilling the national task; 7) the colleges should be able to get direct grants from the Government for their new worthwhile programmes; 8) the University Grants Commission (UGC) should not function merely as an administrative grants distributing body; it can be a highly academic body.

264 de SOUZA E: And now, a radio university. Economic and Political Weekly 1970, 5(21), 852.

The Education Minister's (V.K.R.V. Rao) proposal to set up a Radio University on the lines of Britain's Open University has been criticised. The proposed Radio University is apparently intended to ease the pressure of admissions in already over-crowded colleges and to provide a minimal amount of higher education to those who do not get admission in colleges. The utility of such over-simplified versions of degrees has been questioned. It is pointed out that the promotion and functioning of a Radio University require not only high calibre academicians of whom there is a shortage but also educational technologists of whom there are none. It is advocated that the energy and limited resources should be concentrated on improving the existing system.

265 SRINIVASA IYENGAR K R: Two cheers for the Commonwealth, talks on literature and education. Bombay, Asia Publishing House, 1970, ix, 315p.

The volume is a selection of talks and it includes the following topics on education: 1) postgraduate centre; 3) our expanding universities; 3) scientific research and national development;

4) student unrest and student participation; 5) integral education; 6) medical education and research; 7) psychology and education; 8) language problem of India.

HISTORY

266 ARUNACHALAM M: Education in ancient Tamilnad. Tiruchitrambalam (Mayuram), Gandhi Vidyalayam, 1969. 108p.

An attempt is made to give in a short compass the ancient Tamil people's concept of education. This is based chiefly on what are known as the Classics of the Sangham Age, consisting of the Eight Anthologies and the Ten Long Poems. Later books are also briefly referred to.

267 BHATNAGAR S K: History of the M.A.O. College, Aligarh. Bombay, Asia Publishing House, 1969. XX, 373p.

The Muhammadan Anglo-Oriental College (M.A.O. College) of Aligarh was founded by Sir Syed Ahmad Khan in 1875 after the model of the system followed in the English Universities of Oxford and Cambridge. The institution has become very much a part of Muslim activity in India during the last one century. The institution was developed into Aligarh Muslim University in 1920. The genesis of the institution, the ideals of the founder, the role of its English Principals, the activities of the students and the efforts of the trustees to raise the academic and moral stature of the institution have been described in detail.

INSTRUCTIONAL MATERIAL AND AIDS

268 DEWAL O S: Science text-books and programmed learning. Journal of Education and Psychology 1970, 28(1), 65-9. 12 ref.

In spite of the fact that many changes in methodology, mode and medium of teaching have been brought about, the overall pattern and texture of text books continues to be the same. Discussing the many limitations of existing textbooks, it is felt that the effectiveness of text books could be enhanced by incorporating programmed learning principles in the preparation of text books.

Certain suggestions in this regard have been given. Most of the science text books contain experiments which the students are expected to perform. But making available experimental kits to individual students is not feasible. Hence, the teacher should show the experiment and students should record their observations. For this, it is necessary to modify the text and make it closer to observation note book cum text book. Here again the observation should be confirmed or corrected by the right responses provided in the text book itself at appropriate places.

269 HIREMATH N R: Textbook production at the State level. NIE Journal 1970, 4(4), 21-4. 4 ref.

Though nationalization of textbooks has eliminated several malpractices and lowered the price of textbooks, they are poorly edited, illustrated and printed and are neither tested in the classroom situations nor revised from time to time. The following remedial measures may be followed: 1) developing objective criteria for evaluating textbooks in various subject areas; 2) finalising the syllabi at the all-India level to facilitate the adoption by all States of the textbooks produced by NCERT; 3) entrusting the work of printing, distribution and sale to autonomous organizations on the condition that they should finance the cost of the academic part; 4) enlarging the functions of the State textbook production unit.

270 KALBAG V S: Science teaching aids for the seventies. Instruments India 1970, 5(2), 14-15, 18, 21.

Science teaching aids required by schools have been discussed under three broad headings a) science apparatus for the pupils, b) demonstration apparatus and specimens, c) audio-visual devices. The following suggestions have been made: 1) providing the pupils and teachers not with the complete apparatus but only with the tools, materials and components not available in the school environs so that they make themselves most of the apparatus they need; 2) construction or collection of demonstration apparatus and specimens by the pupils or teachers with the cooperation of local industries, quarries etc. and using new methods of small-scale preparation and microprojection; 3) giving priority to make the simpler audio-visual devices like blackboards, flannel boards, wall charts, 8 mm films etc. more widely available instead of importing sophisticated devices. The self-reliance implied in the above suggestions could be achieved by the All-India Instrument Manufacturers' and Dealers' Association.

271 NIGAM B K: Plea for improving textbooks in economics. Educational Forum 1970, 15(2), 34-6. 9 ref.

The importance of well-written textbooks is stressed especially because the teachers and students are unlikely to go beyond what are given in them. The drawbacks of the existing school textbooks of economics have been pointed out. The following suggestions are given: 1) while treating any topic, historical background should be reduced to the minimum and more stress should be on modern developments; 2) in regard to the progress of Five Year Plans, besides giving the Government version, views of eminent authors should also find place to present a balanced view; 3) the works and ideas of eminent Indians should also be cited in textbooks; 4) citations should be given from journals in order to encourage students to refer to journals; 5) the textbooks should cater to the special needs of both 'below average' and 'gifted' students; 6) at the end of each chapter, suggestions and assignments should be given to enable students to undertake cocurricular activities.

272 TARA ALI BAIG: Educational television - possibilities in India. Statesman 20 June 1970, p.6, Cols. 4-6. 1400 words.

The need for developing educational television in India has been pointed out. It is urged that the general public should insist on T V development. An international consortium might be the solution to help establish T V in India on the scale needed. A special 'think group' comprising enlightened humanists, advanced educationists, technologists, and representatives of industry and agriculture as well as family planning should tackle the problem of T V development. Primary schools should be made community centres for T V. Short courses in monitor system for teachers and training for students in T V maintenance and repair should be arranged. During the day T V should be an educational tool for the pre-school group learning letters and numbers as well as for the older students, and in the evening both entertainment and informative programmes should be presented.

LANGUAGE PROBLEM

273 BANERJEE T: Problem of medium of instruction in Bengal - a historical survey (1835-1966). Quarterly Review of Historical Studies 1968-69, 8(2), 91-8. 28 ref.

A historical survey of adoption of medium of instruction in schools and colleges in Bengal since 1835 has been presented.

274 BOSE P K, MUKHERJEE S P: Language for science and technology education - an opinion survey. Science and Culture 1970, 36(2), 76-81.

The opinion survey conducted by the Indian Science Association among its 1176 members to elicit their opinions on the issue of the language(s) to be used for the pursuit of science and technology at different levels, has resulted in the following conclusions: 1) instructions on science and technology should be arranged in regional languages in high schools and in English in colleges and universities; 2) English should continue to remain the link language among the different linguistic groups and its study should begin in the age-group 10-14; 3) an adequate knowledge of English (as also in Hindi according to some respondents) should be a pre-requisite for admission to undergraduate courses in science and technology and arrangements for instructions in English should be made in such courses; 4) International terminology should be borrowed by all Indian languages; 5) Research papers, theses etc. should be published in English as also in the mother-tongue; 6) Roman script may be adopted as a common script for science and technology, irrespective of the language used.

275 RAJAGOPALACHARI C: Medium of instruction. Swarajya 1970, 14(49), 1-2.

It has been proposed that two languages: 1) English, the language of the text books and of all colleges in India and 2) local Indian language i.e. the mother tongue must both be utilized for teaching in colleges. This dual language medium shall be helpful for both objectives, for full and precise communication of knowledge as well as equipping the student with the necessary instrument for all India movement either for studies or for employment.

LITERACY

276 CHATTERJEE R G: Motivating factors affecting literacy campaigns. Indian Journal of Adult Education 1970, 31(6), 13-14.

The following methods have been suggested to motivate rural illiterates in literacy campaigns: 1) introduction of incentives, both financial and otherwise; 2) including in the literacy programme certain elements of attraction to rural people; 3) making periodic arrangements for entertainment. All these motivating factors should be selected on the basis of the social, economic and cultural pattern of the area. Suitable teaching method may be selected after assessing different methods with the help of control groups. The students may be classified into three groups on the basis of age - a) upto 15 years of age, b) those between 16-30, c) those between 31-50.

PHYSICAL EDUCATION

277 GANGAPPA M A: Vitalising physical education in schools. Haryana Journal of Education 1970, 3(2), 9-15.

The following suggestions have been made for vitalising physical education in schools: 1) careful selection of the physical education activities keeping in view the age, sex, interest and capacity, and physical and psychological growth of the students; 2) providing each school with adequate playgrounds, trained teachers and equipment; 3) eliciting active cooperation of every teacher in vitalising physical activities; 4) orienting every teacher trainee in the fundamentals of physical education; 5) conducting a thorough medical and physical examination of the pupils with the necessary follow-up programme; 6) creating interest and motivation in physical activities by arranging meetings and seminars, filmshows, inter-school tournaments etc.

POLICY AND PLANNING

278 INSTITUTE OF APPLIED MANPOWER RESEARCH, DELHI: Employment outlook for engineers, 1969-79. Delhi, the Institute, 1969. V, 64p.

An attempt is made to assess the demand for and supply of engineers. It begins with an analysis of the current situation and proceeds to measure the extent of current unemployment among engineers. The impact of recession as well as of the actual growth of engineering

manpower supply up to the end of 1968 is studied with reference to the potential for employment of engineers. A review of the development of facilities for engineering education during the three plan periods and the consequent increase in the stock of engineers in the country is made. Assuming no change in the existing training facilities and making due allowance for attrition, the supply of engineers during the Fourth and Fifth Five Year Plan periods is projected. The choice of a suitable methodology for projection of the demand for engineers is discussed keeping in view, inter alia the availability and usability of data, the trends of economic growth and other related aspects. After choosing a methodology which is based upon a linear relationship between engineering employment and national income, an attempt is made to estimate the demand for engineers during the next decade, more specifically for 1973 and 1978. The results are presented and a comparison is made of the demand for engineers with the future supply. In the end, the tentative estimates of demand and supply together are given by specialities.

279 MATHUR H M: Need for a comprehensive educational plan. Yojana 1970, 14(10), 9-10.

T concept of educational planning must: 1) embrace all levels of education, facilitating proper articulation; 2) be integrated with the country's economic and social development, taking into consideration the regional differences; 3) be concerned with both quantitative and qualitative aspects; 4) function as an uninterrupted long-term activity. In the planning process, the following steps are needed; 1) establishment of a planning unit with competent staff; 2) survey of existing educational situation and its future requirements; conducting studies of manpower requirements; 3) drawing up priorities; 4) promoting institutional planning and other activities to awaken plan consciousness; 5) undertaking periodic evaluation. The plan has to be judicious and realistic with regard to the financial implications. Proper training and orientation of the implementing staff is very important.

280 PANDA S: Centre - State relations in education, a case for redefinition. Naya Shikshak (Teacher Today) 1970, 12(3), 20-6.

Though education is a State subject, the 'centralised planning - the evolution of a national policy' and the central grants for education are the two aspects through which the Government of India is playing a dominant role since independence. Such a central dominance has its own advantages and disadvantages which have been discussed. The following suggestions have been given:

1) the Central efforts should cover all aspects of education and aim at major advances and long term benefits; 2) the States should be encouraged to undertake surveys, assess their needs and prepare and implement development plans within the broad national guidelines; 3) the University Grants Commission, National Council of Educational Research and Training, and the Central Advisory Board of Education should have State units to advise and coordinate the activities of the State and Central Governments; 4) educational planning should start at institutional level and proceed upwards to the District, State and national levels and the conflicts between the views of the Centre and States should be amicably settled.

281 RAJASTHAN SEMINAR ON EDUCATIONAL PLANNING AND ADMINISTRATION, JAIPUR, FEBRUARY 25 - MARCH 1, 1970. Main conclusions and recommendations. Naya Shikshak (Teacher Today) 1970, 12(3), 107-12.

The seminar was organized by the Rajasthan State Government in collaboration with the Asian Institute of Educational Planning and Administration. The following topics were discussed: 1) Rajasthan State Fourth Five Year Plan of Education; 2) pattern and problems of educational administration; 3) District educational plan and institutional planning; 4) qualitative improvement of education not involving much of a financial outlay; 5) community participation and school improvement programme. The main conclusions and recommendations of the seminar on each topic have been given.

282 SARAF S N: Research in educational planning, an interdisciplinary approach. (In Educational research, an interdisciplinary approach, report of a seminar. Delhi, Central Institute of Education, 1969. 73-92).

Educational planning must find its meaningful setting in the total social, political, economic and cultural matrix of a country. The plan can be formulated either at the top level of the national Government or they can grow up from the grass roots and be aggregated into a grand design. In either case it would be necessary to work out the relationships of one level of education with another both in terms of the economic and social goals of the plan, as well as in terms of appropriate allocations of financial and manpower resources. Thus, there is need for research in educational planning. There is need for the study of problems both at the national level and at the States and districts level. Most projects in the field of educational planning call upon the skills not only of educators but also of social scientists, economists, administrators, management experts, public finance experts etc. The important problems

that need study with an inter-disciplinary approach can be grouped under the following 4 heads: 1) economics and financing of education; 2) educational planning models; 3) implementation and administration of education programmes; 4) educational practices.

283 SURINDER KUMAR: Determined bid to solve problem of educated unemployment. Yojana 1969, 13(25), 14.

Greater out-turn from universities and expansion of educational facilities has been held as one of the main causes of unemployment among the educated. Following suggestions are given for tackling the problem: a) controlling increase in population; b) restricting university education to brilliant students and diverting others to other branches of technical training; c) accelerating economic growth; d) undertaking proper manpower planning and reorientation programmes; e) creating congenial atmosphere for self employment; f) exploring the possibility of sending engineers and medical graduates to friendly countries for employment; g) educated people accepting lower salaries.

PRIMARY EDUCATION

284 Primary education [Editorial]: Economic Times 8 May 1970, p.5, Cols. 1-2. 800 words.

The twin problems of primary education and adult literacy have received a belated attention of the Central Advisory Board of Education (CABE). The earlier plans for enforcing compulsory education having failed, the CABE has appointed a committee to suggest ways and means to achieve the target by 1985. Some of the obvious impediments in the way are the size of the population and the country, rural character of the population, varying conditions, multiplicity of languages, innate resistance to girls' education, and lack of finance. Money should be drawn from a number of authorities including the general community and organized voluntary effort should also be brought forth. Immediate attention should be given to the problems like enrolment of tribal and poor children, and girls and retention of the enrolled children for the full course.

285 AIRAN J W, Ed. Nature of leadership, a practical approach. Bombay, Lalvani Publishing House, 196. . xxii, 186p.

There is a growing realization that a scientifically planned development of an economy requires trained leadership. The need therefore arises for training a select group to assume leadership responsibilities at different levels in various fields. The book analyses the need for leaders and examines in detail the training for leadership programme. The methods whereby adequate leadership talent can be mobilised have been elucidated. Stress is laid on the fact that the young people are the future leaders, and that their training for the role should form a basic part of the college curriculum. The author organised a series of conferences, discussions, and one major workshop to discuss all the major factors related to the problem. The book incorporates the results of these studies as well as the opinions of the persons responsible for conducting them.

286 JOSHI A C: Education of the gifted. Haryana Journal of Education 1970, 3(2), 1-5.

The special characteristics of gifted children have been discussed. Stressing that special attention should be given to the education of the gifted, the following programmes have been suggested: 1) accelerated promotion; 2) enrichment of curriculum or special classes, or a combination of these. Opportunities for self-expression, investigation, critical thinking and satisfactory social relationships could be afforded through project assignments or work with a guiding teacher. Physical development and social and moral education for the gifted have also been stressed. There is need for better teachers to manage the gifted. The various problems connected with the identification and fostering of the gifted have been discussed.

287 MEHTA B H: Education of tribal women and girls. Education Quarterly 1969, 21(1), 44-6.

The problems of tribal education are closely connected with the geography, climate and economy of the region, the social structure and culture. Some private agencies have devoted themselves to the promotion of education of tribal girls. However, the voluntary efforts have not led to large-scale government programmes in this regard. There is poor response because education does not produce

opportunities for work and employment. Educational policy and pattern should be specially designed to suit the peculiar needs of the tribal girls. There is also need to pay attention to the education of adult tribal women.

288 MUKHERJEE D P, SARKAR D: Concept of tribal education in West Bengal. Vanyajati 1970, 18(1), 31-4. 5 ref.

The socio-economic situation of the scheduled tribes of West Bengal vis-a-vis the problems of tribal education have been discussed. The following suggestions have been given: 1) education should be restructured to suit the local conditions and heritage; youth dormitory would be suitable in these areas; 2) teacher education should be suitably oriented to produce the right type of teachers needed to man the tribal schools; 3) a taste has to be developed in the tribal children for their own arts and crafts. An appropriate curriculum has been suggested. That the new generation of educated tribals may lose faith in their traditional culture, values and ways of life has been the chief educational problem which, it is suggested, could be averted by inculcating a feeling that their education stems considerably from the indigenous culture and is developed in the national sphere.

289 SRIVASTAVA S P: On teaching trades to them. Social Welfare 1970, 17(2), 6-7.

Economic redemption of the mentally retarded children can be facilitated by training them in various trades and occupations right from the commencement of their studies and each school should have a sheltered workshop or occupational training centre of its own for this purpose. This would require huge sums of money, specially, trained staff, working material and a great deal of concerted and coordinated action on the part of the school management, local welfare organizations, civic organizations, district and State administration, employment agencies, philanthropists, the parents and the public. The workshops should also undertake the following services: a) screening and evaluation of trainees, b) developing work habits and attitudes, c) job try-outs and job training, d) job placement.

290 TAKKANI L S: Pseudo-mental retardation. Indian Journal of Mental Retardation 1969, 2(3), 87-97. 10 ref.

An attempt has been made to discuss the etiological factors of pseudo-mental retardation. The following factors have been discussed with relevant case reports which showed apparent mental deficiency: 1) sensory deprivation - auditory or visual defect; 2) motor deficiency like cerebral palsy; 3) nutritional deficiency; 4) language difficulties; 5) cultural deprivation; 6) severe emotional and behaviour disturbance such as childhood schizophrenia. The problem of pseudo-mental retardation can be solved if the emphasis is laid on recognising the underlying cause and planning the treatment accordingly.

291 VERMA S K: Special education for the handicapped. Social Welfare 1970, 17(3), 13-14.

The history of special education for the handicapped has been reviewed. The important current trends are - a) integration of the handicapped children with others both at their homes and in the schools, b) team approach in meeting the needs of the handicapped, c) application of research findings in fields like medicine, psychology, sociology and general education to special education. The main problems confronting special education to-day are: 1) inadequacy of the programme both in terms of quantity and quality; 2) imbalances and discrepancies in the provision of educational facilities for different groups of handicapped; 3) paucity of trained personnel to manage these programmes; 4) persistence of negative attitudes towards the handicapped.

STUDENT INDISCIPLINE STRIKES

292 ANDERSEN W, PANT A: Student politics at Allahabad University. Economic and Political Weekly 1970, 5(23), 910-16; 5(24), 941-8. 47 ref.

The social composition of Allahabad University and the effect of sociological factors on student politics have been studied in detail. The reasons for student alienation are seen to emanate not only from within the university but also from the general social and economic deprivation prevalent in Allahabad and the rural areas of eastern Uttar Pradesh. Student politics in the university is regarded as

the 'intervening variable' between violence and alienation. The psychological need for such violence becomes apparent within the context of student frustrations. The various politcal groups, their connections and their leadership are analysed. The student union's working from 1947 to 1968 is examined and a full account of the union elections in 1969, is given.

293 CHADHA P: Union politickings. Mainstream 1970, 8(32), 31-2.

A study of the student agitations and student leaders in the Delhi University has led to the conclusion that most of the trouble in the university sprang from student faction-fighting and the union politics. The necessity to strictly supervise the running of the students union and to see that this democratic institution is not exploited by undesirable elements has been stressed.

STUDENT SELECTION

294 DESAI D M: Are SSC marks valid criteria for admission to science courses? Education and Psychology Review 1970, 10(2), 107-9.

A study was undertaken in the M.S. University of Baroda to determi the relationship that existed between the students' achievement in the Secondary School Certificate (SSC) examination and in the preparatory science examination of colleges and university departments, in terms of marks obtained by the same students at these examinations. The following are the main implications of the study: 1) to avoid high rate of failure and wastage at the preparatory science classes, only students who have offered higher mathematics at the SSC examination should be admitted; 2) the total only of marks in English, Gujarati, Hindi and higher mathematics at the SSC examination should be used as a criterion for admission to the college preparatory science courses; 3) a scholastic aptitude test should also be used as an additional criterion for admission. The Faculty of Education and Psychology of the Baroda University has developed such a test.

295 THIRUGNANASAMBANDAN U A, SOUNDARARAJA RAO T R: Construction of a suitable entrance test for pupils who wish to choose algebra and geometry as one of the electives in tenth standard. Journal of Educational Research and Extension 1970, 6(4), 146-56.

The mathematics syllabus of classes VII to IX under the revised pattern of secondary education of the Government of Madras was studied and a test consisting of 145 items was constructed. The test was tried on 135 pupils who have completed standard IX. On the basis of the scores items with difficulty level ranging from 30% to 70% and discriminating index above 20 were chosen for the final test. The final test included a questionnaire to collect personal data about the student. The final test was administered in the beginning of the academic year to 300 Xth class students (belonging to 8 rural and urban schools) who have chosen algebra and geometry as the elective subject. On the basis of the results the following observations are made: 1) the test was found to be reliable with a coefficient of internal consistency of 0.84; 2) there was no significant difference between the attainments of boys and girls; 3) there was significant difference between rural and urban students; 4) there was significant correlation between the pupils' interest for the subject and their scores; 5) there was woeful lack of basic knowledge of the subject among all the students who have chosen this as their elective subject;6) the teacher has an important role in guiding students in their choice of electives. This test is recommended for streaming of pupils to elective mathematics. Certain suggestions, appropriate to the observations, have also been made.

TEACHER EDUCATION

296 BOURAI H H A: Search for relationship between theory and practice-teaching. Technical Teacher 1970, 4, 61-6. 10 ref.

It was hypothesised that insignificant differences exist in the achievement of B.Ed students in 1) principles and methods of teaching of two school subjects; 2) theory of education and 3) practice-teaching, and that there is low relationship between practice-teaching and theory of education. A study conducted among 415 B.Ed students of a comprehensive teachers' college of Rajasthan, taking their marks in the university examination, confirmed the hypothesis. The following suggestions have been made: 1) the courses on methods of teaching should take into consideration actual classroom situations; 2) the size of the methods class should be small in order to successfully integrate theory and practice; 3) attention must be focussed on problems

of teaching and learning situations in classrooms; 4) in training, equal time should be devoted to theory and practice; it may even involve recasting of courses; 5) student-teachers should be given full freedom in practice lessons, to experiment with what they learnt in theory classes; the supervisors also should overhaul their techniques in practice teaching classes.

297 DONGRE G S: Educational extension as I visualise it. Naya Shikshak (Teacher Today) 1970, 12(3), 14-19.

Extension in education is defined as the spread of education to the needy and educational extension as the process of making the serving teachers aware of the new knowledge, new skills and new attitudes that have come about since the time the teachers had their pre-service training. The philosophy of educational extension has been geared up to the principles of motivation and the practices of group dynamics. It has recently confined itself to the programme of in-service education. The professional growth of the teacher community at all levels can never become possible unless the teachers accept the responsibility on their own for which self-education is the answer. The extension centres, it is maintained, should be a transitional strategy.

298 GOVINDARAJAN T N: Leadership styles and educational technology. Technical Teacher 1970, 4, 53-60.

It is pointed out that in the conventional system of education, hardly 8% of what the teacher teaches is retained by the students. This is due to the absence of the dynamic climate in the classroom. Modern methods of education, viz., programmed learning, audio-visual education etc., create the dynamic situation between the teacher and the taught. For this it is necessary that the teacher possesses the desirable democratic leadership quality. Teacher training, it is stressed, should undertake the promotion of such leadership quality in teachers. A formula developed by the author to measure the desirable style, has been described. It is pointed out that the formula could be applied to small task-oriented groups to find out the desirable types of leadership among participants.

299 GUPTA S K: On teaching philosophy of education. NIE Journal 1970, 4(4), 10-13.

The need for teaching philosophy of education in teacher training programmes has been highlighted citing the arguments put forth by B. Smith, Maccia, Arnaud Reid etc. The following suggestions have been made for its teaching: 1) introducing the lives of thinkers and the educational reformers to create an emotional appeal; 2) enabling the trainees to enter through easy paths into different and complex philosophical world of ideologies, giving appropriate similies and analogies to make the difficult theories understandable; 3) teaching values with an Indian orientation and the educational experiments carried by the Indian educators like Swami Shraddhanand, Tagore, Mahatma Gandhi and Shri Aurobindo, forming the central themes while developing educational thoughts; 4) introducing the philosophical terminology to bring precision in the trainees' thinking; however, this has to be done fighting a real educational challenge.

300 KAKKAR S B: Influence of teacher training on trainees' attitudes. Indian Educational Review 1970, 5(1), 106-13. 9 ref.

The study was undertaken to determine the influence of teacher training upon the attitudes of undergraduate students, towards children. The Minnesota Teacher Attitude Inventory was administered to 160 teacher trainees at the beginning and at the end of a teacher training programme (for elementary school teachers), and the pre-test and post-test scores compared. Nineteen trainees who showed the greatest change in scores were interviewed, and a change in the direction of more liberal attitude towards children at the end of the teacher training programme was noticed.

301 KAPUR J N: Goals for pre-service training of Mathematics teachers. Naya Shikshak (Teacher Today) 1970, 12(3), 59-63.

The following goals have been listed: 1) making teachers feel enthusiastic about learning mathematics; 2) enabling them to communicate creativity; 3) developing a capacity to solve non-routine problems; 4) creating a capacity of mathematizing given simple situations, of idealizing the given situations and of separating the essential features from the non-essentials; 5) enabling to explicate intuitively perceived mathematical situations; 6) developing in them a feeling for the dynamic growth

of mathematics; 7) developing a capacity to recognize explicitly abstractions, generalizations, depth, logic, elegance and precision;8) providing them a capacity for local and global axiomatization and knowledge of significant applications of mathematics in various fields. The following courses have been advocated for pre-service training of school teachers: 1) problem solving; 2) foundations and nature of mathematics; 3) applications of mathematics; 4) history of mathematics; 5) programmed learning and computer programming. The teacher educators for the training course must be creative mathematicians of extensive and intensive abilities.

302 LIPKIN J P: Secondary school teacher education in transition. Bombay, Asia Publishing House, 1970. vii, 123p.

Since Independence there has been a steady trend towards a pattern of training more suited to the Indian socio-economic and political context. The motive forces for and the extent of the transition has been studied. The adoption of the British educational tradition in Bombay has been examined and the new trends in the field of secondary teacher training in India (with particular reference to change in secondary training colleges affiliated to Bombay University from 1953 to 1964) have been analysed. The final chapter sums up the progress of the evolution of an Indian system of secondary teacher training. The factual data collected have been summarised in thirteen tables. The appendixes include syllabuses, curriculums, recommended textbooks, specimen examination questions etc.

303 PUROHIT J N: Study of factors affecting the achievement of B. Ed. student-teachers at the final examination. Naya Shikshak (Teacher Today) 1970, 12(3),31-8.

The analysis of performance of 113 B.Ed. students in their final examination had led to the following conclusions: 1) the trainees having 5-8 years of previous teaching experience seem to perform better than those having more or less previous teaching experience; 2) trainees having post-graduate degrees perform better; only third-class degree holders seek admission to training courses; 3) the performance of primary teacher-trained candidates is poor; 4) bigger the family responsibility, the lower is the performance of the trainees; 5) the performance of the age group 25 - 29 years is the highest in the whole batch; 6) the women trainees perform better than men trainees. The following recommendations have been made: 1) post-graduates and second class degree holders should be admitted to the training course; 2) male and female candidates should be in equal proportion; 3) the candidates of the age group of 25-29 years should

be given preference over others; 4) there should be a separate B.Ed. (primary) course for primary teacher-trained teachers and there should be avenues of promotion within the primary stage for those who complete B.Ed. (primary) course.

304 RAINA T N: Comparative study of the achievement of science and arts student teachers. Psychological Studies 1970, 15(1), 34-9. 8 ref.

A comparison of achievement of 116 science student teachers (male 105 + female 11) and 146 arts student teachers (male 115 + female 31) admitted to the Summer School - Cum - Correspondence Course for B.Ed. in the Regional College of Education, Ajmer in 1967 and 1968 was made with respect to education papers. The age of the students varied from below 30 to above 50 and the experience varied from below 5 years to above 10 years. The common assumption that the students with specialisation in science subjects are poorer in achievement on essay type composition as compared to students with specialisation in arts subjects was not proved. The data presented also indicated that the two groups are, by and large, homogeneous, judged from the point of view of spread of scores.

305 RAINA T N: Teaching the teachers. Hindustan Times 27 June 1970, p.7, Cols. 4-7; p.8, Col. 3. 1700 words.

The present low standard of teacher education has been attributed to the following factors: i) poor academic background of student-teachers as well as teacher educators, ii) outmoded teaching methods, iii) poor content of philosophy of education, iv) lack of universal agreement among the psychologists on important concepts and theories, v) practice of making extrapolation from animal experimentation to human behaviour, vi) lack of knowledge about instruction and teaching processes, vii) denial of freedom for student-teachers in practice-teaching, viii) poor quality of research publications, ix) short duration of the teacher education programme. Extending the teacher education programme to four years, and entrusting the responsibility of uplifting the teacher education colleges to National Council of Educational Research and Training have been suggested.

306 VAIDYA N: Building quality into our teacher training programme. Technical Teacher 1970, 4, 8-11. 7 ref.

Development of a practical inventory of professional experiences as a guide to the student teachers has been recommended. The four steps that help upgrade teacher training in India are: 1) stating in detail the specific aims and objectives in terms of pupil behaviour against the backdrop of the general aims and objectives of teaching any subject; 2) developing imaginative types of lesson plan formats which reflect varied methods of teaching currently available; 3) analysing and highlighting the different patterns of teacher behaviour; 4) developing a list of teaching competencies to be developed among teachers. The three practical methods to improve the quality of teacher education in India are: 1) microteaching where the real classroom situations are reduced to a minimum at the same time enhancing the level of feed back; 2) teaching problems laboratory which familiarizes students with abstract educational concepts by creating life-like situations; 3) interaction analysis which is a system for describing and analysing teacher-pupil verbal interaction.

TEACHING METHODS

307 AHLUWALIA S P: Regional geography in schools - some considerations. NIE Journal 1970, 4(4), 14-16.

The importance of geography in the secondary school curriculum as a means of promoting international understanding and welfare has been pointed out. The modern concept of regional geography has been considered as the most useful method of teaching geography. With regard to definition of region, Herbertsons' theory of natural regions is the most authentic and authoritative in recent times. Regional geography based on major natural regions aims at enabling the pupils, to cover the world through regional syntheses in simple terms, comprising the bare facts of relief and climate as a background to a survey of human economics. The teaching of geography on regional basis not only reveals the regional circumstances but also points out the external relations of the regions under study. A model experiment along statistical lines conducted by Anthony D'Souza showed that the value of teaching by the regional method far outweighs that of the descriptive method.

308 CHAITANYA: Language learning and audiovisual techniques. Naya Shikshak (Teacher Today) 1970, 12(3), 77-81. 13 ref.

The place of audio-visual technique in language teaching has been discussed and it is concluded that it would be wrong to assume that using a visual element will act as an effective agent in lessening interference from the mother-tongue. It only focusses attention, stimulates and adds interest, provides a means of revision and aids recall and can provide semantic elements. The meaning acquisition problem is not solved. It is maintained that all the techniques used in the classroom and laboratory rest on a rather patchy theory developed in the West. The methods, it is pointed out should be reoriented to be consistent with the needs.

309 DESAI D B: Developing a strategy for programmed learning in India. Journal of Education and Psychology 1970, 28(1), 49-53.

The four dimensions, i.e. training, research, teaching and communication, have been stressed in order to build up a strategy to introduce programmed learning as an innovative idea in Indian education. The major possibilities of failure and action plans to achieve success in this regard, have been presented in a diagram. For any institution taking up programmed learning, the following five stages of a strategy have been indicated: 1) conscious realization and will to improve; 2) adopting an idea; 3) developing an innovation practice; 4) steps towards change; 5) institutionalization and diffusion.

310 JANGIRA N K: Adoption of classroom interaction analysis as a technique for vitalising teaching, some considerations. Quest in Education 1970, 7(2), 60-9. 18 ref.

There is urgent need to apply classroom interaction analysis to the improvement of teaching. The following issues that will have to be considered in preparing effective programmes, have been dealt with: 1) whether to develop new systems of classroom interaction analysis or adopt/adapt the systems that have been developed elsewhere; 2) whether to use unidimensional system or multidimensional systems; 3) whether to cover in the programmes ordinary classroom situations or to cover classrooms involving special problems; 4) what kind of programmes should be planned? 5) what systems should be adopted/adapted? 6) what will be the modus operandi for the collection of data? 7) what to expect from the teachers who are to be involved in the programmes?

311 MISRA R C: Bilingual method in English instruction. NIE Journal 1970, 4(4), 44-7.

The Bilingual method as laid down by C.J. Dodson has been discussed and the differences and similarities between this method, and Grammar-translation method, Direct method and Structural approach have been pointed out. Though mother tongue is the potent instrument in the Bilingual method, it is used only as a quick way to establish meaning of new words, phrases and sentences and to control practice and minimize the time employed for teaching and learning effectively. The need for experimental verification of Bilingual method in Indian setting has been emphasized.

312 PAREEK U, VENKATESWARA RAO T: Pattern of classroom influence - behaviour of class V teachers of Delhi. Indian Educational Review 1970, 5(1), 55-70. 27 ref.

The study was conducted on 50 male and female teachers randomly drawn from Hindi-medium primary and middle municipal schools in Delhi. The interaction analysis technique, an observational technique developed by Flanders, was used and the observers were eight social scientists who had been specially trained. The analysis of the data revealed that the general pattern in the influence-behaviour of the teachers appeared to be lecturing and the total amount of talk done by students was in the way of responding to the teachers. This finding of the study suggests that teacher training should emphasise teachers' responding to the pupils at the feeling level, encouraging pupils to express themselves frankly, and accepting their ideas. The training should make effective use of feed-back on behaviour to bring about change in behaviour, should emphasise the skills, of promoting interdependent relationship in the classroom and should use methods of increasing the level of motivation for achievement. This should also result in making the student-talks more varied and in helping the students take more initiative.

313 PATEL A S: Programmed instruction, its psychological basis and evaluation. Journal of Education and Psychology 1970, 28(1), 35-48. 18 ref.

It is observed that the major contribution of programmed instruction is to the theory of teaching and that the problem of teaching and learning have not been always attacked with so much sophistication and experimental skill as evidenced in much recent research on pro-

grammed instructions. Still, the teaching phenomena are so complex that more useful research with better control is needed to build up a body of sufficient knowledge, termed as educational technology. It is maintained that at present programmed instruction needs yet to be tested in the laboratory rather than adopted for school use in the country. It would be a hasty step to prescribe it at present as a teaching method, especially as the most potent innovation to replace the live teacher.

314 RAGHAVENDRA BHAT N: Learner-centred instruction. Technical Teacher 1970, 4, 12-15. 3 ref.

A closed-loop type of teaching system having adaptability based on feed back and proper evaluation techniques built in at every stage has been recommended. Any of the media of instruction, i.e. text-books, films, lectures etc. can be made to function as closed - loop system in a total teaching package providing learner-centred instruction. The teachers' role in the new system would be increasingly that of a guide and counsellor. The plan of programmed instruction in this context has been discussed. The effectiveness of the various methods of instruction technology i.e. traditional (various open-loop methods), programmed instruction, computer-based teaching machine technology, learner-centred instruction with a suitably developed teaching package for incorporating into a teaching package has been indicated.

315 SHAH G B: Developing programmed learning courses in colleges of education. Journal of Education and Psychology 1970, 28(1), 19-26, 69.

The Faculty of Education and Psychology of the Maharaja Sayajirao University of Baroda introduced a course on programmed learning at the M.Ed. level in the year 1966. The objectives and the course outline have been given. On the basis of two years experience, the following observations and suggestions have been made: 1) the time devoted to this course was not sufficient; 2) the course was not compulsory to all students; the course is likely to be popular in the future; 3) it would be better if preliminary ground is covered at the B.Ed. level; 4) many colleges of education are not in a position to start such courses for want of competent teaching staff; the National Council of Educational Research and Training (NCERT) should train teaching staff; 5) specimen programmed material should be produced on various school topics and these should be available to teachers; 6) the NCERT should set up a separate cell for programmed learning; 7) the Centre of Advanced Studies in Education in the M.S. University of Baroda in collaboration with NCERT,

could undertake personnel training programmes. The following information has also been given: 1) institutions in India where programmed learning has been introduced; 2) the syllabus for programmed learning at M.Ed level as prepared by the zonal seminar on programmed learning held at Sardar Patel University in 1969; 3) select list of books on the subject.

316 SINGH L C: Effects of orthography and pronunciation on the affective ratings of concepts. Indian Educational Review 1970, 5(1), 75-83. 4 ref.

The study was undertaken to test the hypothesis that for a bilingual subject the affective rating of certain concepts in the mother tongue differs from the rating of translation-equivalent words in the second language, and to find out if the differences could be attributed to orthography, or pronunciation, or both. Ten compound bilingual subjects were asked to rate five concepts presented in four combinations of the Roman and Devanagari orthography of English and Hindi, respectively, and the corresponding pronunciation of the two languages. The concepts were rated against twelve Graphic Differential Scales. The data did not support the hypothesis.

317 SREEDHAR M V: Perspectives in programming language courses. Journal of Education and Psychology 1970, 28(1), 54-64.

It is shown how programmed learning could be used with much profit in the field of language learning in general and learning a second language in particular. A few specimen frames in teaching various aspects of a second language have been presented. It is felt that all but the sound system (Phonetics) of a second language could be programmed in a book format. The teaching of reading and writing of script could also be programmed in a book format.

318 SUNDARAM S: Programmed instruction for qualitative improvement of training. Technical Teacher 1970, 4, 32-6. 6 ref.

Programmed instruction would improve the quality of the National Apprenticeship Training Schemes and programmes as it has the advantages of an individual rate of progress, self competitive environment and the absence of the frustrating feeling of failure. The three main types of programmes - linear, branching and skipping - and the forms of their presentation and the methods of writing them

have been discussed. To start with, programmed instruction methods could be followed at the Central Training Institutes at Delhi, Bombay, Calcutta and Madras, and later extended to the Industrial Training Centres. A top level committee under the Central Apprenticeship Council charged with the responsibility of organizing the scheme by defining the objectives and planning the strategy, and an expert team at each regional level to study and prepare the programmes for implementation, and proper utilization of I.L.O. funds for the aid of the apprenticeship scheme have been suggested.

TESTS AND MEASUREMENTS

319 DE B, RAMADHAR SINGH: Hindi adaptation of the Aberdeen Academic Motivation Inventory. Indian Educational Review 1970, 5(1), 71-4.

The twenty-four item self-rating Aberdeen Academic Motivation Inventory was adapted in the Hindi language. The appropriateness of translation of items was judged by ten school teachers in terms of their content, meaning and comprehensibility. The inventory was answered by 222 male high school students with the age-range of 12 to 17 years. Item analysis based on the responses of two extreme groups (P80 and P20) led to the rejection of four items. The revised 20-item Hindi version showed a coefficient of stability of .82 with the gap of a month. The validity coefficient of .62 was found by computing rho correlation between scores on the inventory and hostel superintendents' ranking of academic motivation of the subjects. A highly significant difference in mean academic motivation scores between high and low academic achievers in their examination established the concurrent validity of the test. A test of the assumption of normal distribution assured the suitability of the inventory.

320 HIREGANGE T K: Inventory for the evaluation of social and emotional adjustment of high school children. Journal of the College of Education, Karnatak University 1970, 7(2), 51-70. 20 ref.

On the basis of symptoms of good adjustment and maladjustment as well as interview of a few students, eighty items of the Adjustment Inventory (AI) were written. Experts' judgement and a preliminary try-out on 198 pupils led to the pruning of 30 items. The final AI of 50 items was administered to 1266 high school students. The negative response to an item indicated the extent of adjustment.

The scores obtained by all subjects followed closely the normal distribution. The letter grade norms, percentile norms, stanine grade norms and T score norms were established. The coefficient of equivalence of the AI was 0.87, and for the whole test it was 0.90. The coefficient of internal consistency was 0.89. The coefficient of stability was .67 - .76. The external criterion validity was .089. The value of X^2 was found to be significant at .05 level. The AI is recommended for use by teachers, counsellers etc.

321 KOTHARI S: Relationship between the progressive matrices tests and the cancellation task. Psychological Studies 1970, 15(1), 59-61. 3 ref.

Raven's Progressive Matrices Test and Cancellation Test were administered to a sample of 70 graduate students (46 males, 24 females) of Nagpur University, belonging to the age range 20 to 28, to study the relationship between the two tests. The results clearly indicate a close relationship between the two tests, and tend to support the hypothesis that more intelligent subjects will have a higher score on Cancellation Task than the less intelligent subjects.

322 MALATESHA R N: Factorial study of the TAT instrument. Journal of the College of Education, Karnatak University 1970, 7(2), 46-50. 6 ref.

Stories written by 150 boys of IX and X standards from five high schools of Mysore State were analysed for n achievement. There were five projective pictures. The procedure suggested by McClelland et al for scoring the stories was followed in total. After computing the inter-correlation coefficients for the five pictures, it was analysed to find out how many factors this instrument measured . The centroid method of factoring developed by Thurstone was made use of. Factor analysis showed that this instrument not only measures n achievement but also visual perception. However, 95% of the total measured criterion could be attributed to n achievement. Guilford and Lacey test and Mc Nemar test showed that this instrument measures not more than two factors.

323 MEHROTRA K, MEHROTRA L P: Comparison of Stanford Binet and Bhatia's Battery of performance tests. Journal of Regional College of Education, Bhopal 1970, 3(4), 135-7.

The aim of the study was to compare the IQs obtained on the two tests - 1) Hindi version of Stanford Binet Test; 2) Bhatia's Battery of Performance Test of Intelligence - when applied on the same individuals and to determine the extent to which the two tests are interrelated. The tests were administered to 93 subjects (age range 11-33 years) by the Bureau of Psychology, Allahabad during 1961 to 1964. The following conclusions have been drawn from the findings: 1) Stanford Binet IQs are lower than Bhatia Battery IQs; 2) the correlation coefficient between the two scales is not high and as such the forecasting efficiency of one test from the other is low; 3) the two tests seem to measure different aspects of abilities; 4) the subjects of average and below average intelligence tend to score higher on performance scale as compared to verbal scale.

324 PATTED G M: Developing an instrument for the evaluation of secondary school mathematics programme. Journal of the College of Education, Karnatak University 1970, 7(2), 71-81. 9 ref.

Keeping in view the objectives of teaching secondary school mathematics and the evaluative criteria, the evaluation instrument was developed. Certain guiding principles were also kept in view in preparing the instrument in order to make it handy and more useful. The instrument was tried out as self- evaluation instrument in thirty secondary schools. The test-retest reliability of the instrument was .86. The external criterion validity was .79. The participating teachers and headmasters welcomed such instruments for the self-evaluation of various programmes. These instruments, it is pointed out could also be used by inspecting officers.

325 SINHA L N K, KRISHNA K P: Smoking problem checklist for college students. Psychological Studies 1970, 15(1), 50-4. 4 ref.

The study was designed to develop a suitable Smoking Problem Check-List (SPC) for college students. The 35 item check-list was prepared on the basis of the problems revealed by 25 heavy smokers in psychological interviews lasting from 2 to 6 sessions. The test - retest reliability (r = .77) and odd-even reliability (.93) of the full-length check-list were sufficiently high. The scores on SPC were compared in terms of different personal variables and attitudes towards smoking. A significant positive correlation (.27) was

found between scores on SPC and frequency of smoking in a day.

326 SRIKANTIAH N Y: Standardisation of an achievement test in algebra. Psychology Annual 1970, 4, 36 9. 11 ref.

The aim of the study was to construct and standardise an achievement test in algebra (for IX and X standard students) so that it could be used to improve instruction and provide guidance. One hundred and ten multiple-choice items were prepared following the suggestions given by Adkins, Ebel and Bean. The items were administered to 20 students in the pre-tryout and to 100 students in the tryout. 75 items were selected for the final test. The final test was administered to 460 students of nine high schools in Mysore city. The test yielded a validity of 0.48 against an external criterion, the mid-session examination marks. The split half reliability for the whole test is 0.81.

VOCATIONAL AND TECHNICAL EDUCATION

327 BACHU A: Nurses' role in school health programme. Nursing Journal of India 1970, 61(5), 141-2, 173.

The essentials of a good school health programme have been discussed in three inter-related parts: a) health education, b) healthy school environment, c) school health services. The nurses' responsibilities have been described as: 1) organization and implementation of the school health programme in cooperation with the administrative staff, school personnel, representatives of the medical profession, and appropriate community agencies; 2) provision of related health learnings experiences, and determination of specific areas of health knowledge needed by pupils at different levels of maturity; 3) providing health counselling and guidance to the pupils, the parents, and the school personnel.

328 DEVADAS R P: Vocational education for women. Educational Quarterly 1969, 21(1), 15-21.

In the context of the rising trend in women's education and employment, vocational guidance assumes importance. All efforts should be made to provide guidance to girls. Girls could be

enabled to make intelligent vocational choices through the following school activities: 1) participation in activities such as arts, crafts, music etc.; 2) discussion in the school assembly by women who are employed in different fields. Vocational education for women needs to be planned in keeping with the reasons for their working and their special attributes. The various vocations suitable for women have been listed. With regard to the problem of getting trained women for specific jobs, organizing condensed courses of training similar to those organized by the Central Social Welfare Board (1963) has been suggested. The various recommendations of the National Committee on Women's Education and the various developments that have occurred in the field of general and vocational education of girls have been presented.

329 GULATI G L: Technical education and standards. Technical Teacher 1970, 4, 67-9.

The importance of equipping technical and engineering students with a good knowledge of the basic principles of standardization and their application has been highlighted. The following measures have been suggested for the purpose: 1) making the engineering, scientific and technical curricula standards-oriented; 2) associating the teachers of scientific and technical subjects with the standardization activities; 3) impressing upon the students the importance of the prevalent standards practices and drawing their attention to the relevant standards having a direct bearing on their subjects.

330 NATARAJAN V: Instructional objectives in the teaching of surveying. Technical Teacher 1970, 4, 42-8.

The instructional objectives in teaching Traverse surveying to students at polytechnic level, have been listed under five units of lessons.

331 NAYAR L P: Occupational training in the age of industrialisation and technological progress. Manpower Journal 1969, 5(1), 12-19.

The occupational training should have its base in a carefully designed system of general education, emphasising the inculcation of proper attitudes, qualities and a broad perspective, stressing science and mathematics and providing appropriate educational and vocational guidance. The stage of intensive vocational training, while not neglecting general education, must emphasise the practical aspect

and must be closely linked with industry. It should anticipate rather than follow change in industrial needs. This stage should be followed by part-time and correspondence courses both in general and vocational subjects and schemes for training within industry.

332 PRAKASA RAO M S: Some reflections on vocational education in India. Manpower Journal 1969, 5(1), 36-51.

Vocationalization of education is the remedy for the prevailing mass unemployment of matriculates. In this regard, introduction of 'work experience' to all stages of education would be a crucial beginning. Defining vocational education, it is pointed out that it should be available to middle school and secondary school leavers and also drop-outs. The success of vocational education programme depends upon the elimination of the following factors: 1) the low social prestige of vocational education; 2) the apprehension among the disadvantaged classes in the rural areas, that vocationalization is a means of keeping higher general education and higher status permanently out of reach for them; 3) absence of a comprehensive system of continuing education, both professional and general; 4) lack of proper assessment of the demand for vocational courses and the products of such courses. Excessive regionalism leads to the establishment of substandard institutions and over-production of skilled manpower. Collaboration with industry is a precondition for the success of vocational programm. it may be examined whether groups of allied industries could jointly organize training courses with subsidy from the Government.

333 SARBHADHIKARY S C: Personnel training for thermal stations. Bhagirath, the Irrigation and Power Quarterly 1970, 17(2), 86-8.

Maximum utilization of the available capacity coupled with the highest possible efficiency can only be achieved by proper operating practices, adequate maintenance and skilled operating personnel who are properly trained; hence the need for specialised training. Based on the additional steam power generating capacity envisaged in the Fourth Five Year Plan, it is estimated that the total number of operation and maintenance personnel required would be 7520 of whom 3240 would require training. There are at present two training institutes, one at Durgapur and the other at Neyveli. A third institute would be set up at Delhi. The training imparted at Durgapur is described. A practice - oriented syllabus has been drawn and the course runs for 12 months comprising 335 hours of lectures for the mechanical group and 286 hours for electrical group, besides in-plant demonstrations.

334 SHITOLE C B: Agricultural instruction and programmed learning technique. Progress of Education 1970, 44(10-11), 386-91. 16 ref.

Certain topics from Agricultural syllabi of VIII class of secondary schools were programmed and the students were taught the programmed material. The following conclusions were drawn from the experiment: 1) all students profited by the programmed learning material; 2) group-spacing is promising as it is also suitable for the class-room situation; 3) the below-average group is much benefitted by the programmed learning material with individual-spacing and it could compete with the above-average group which it cannot do in the traditional method; 4) the above-average group is much more benefitted by the programmed learning material with group-spacing; 5) the three categories of students have shown progress when they learnt the topic by the programmed learning material with the individual-spacing as well as with the group-spacing.

335 SOHAL T S, SINGH B P: Training young farmers in scientific farming. Yojana 1970, 14(12), 21-2.

Punjab Agricultural University, Ludhiana has been running Young Farmers' Training Courses for the last five years with a view to equip farmers with the latest scientific know-how and practical skills in farming. The various steps involved in organizing the courses - 1) publicity to the course; 2) selection of trainees, 3) orientation session; 4) organization of instruction; 5) study tour, etc. - have been explained.

336 SRIRENGAN K: System approach to technician education. Technical Teacher 1970, 4, 1-7. 4 ref.

The basic principles of system analysis and approach have been explained, and applied to the functioning of an industry, enumerating the objectives of the top management and the methods by which they achieve the same. The principles of system approach have been further adopted to analyse the objectives of technician education, training, practice and experience, and for evaluating the curriculum for technicians.

337 Training of foresters [Editorial]: Hindu 17 May 1970, p.8, Cols. 2-3. 450 words.

Forest services should be reorganized in view of the increasing industrial demand for forest products. In India as in other developing nations, the funds for forest development and for training personnel in forestry are inadequate. Forest economics should be given greater emphasis in the educational programmes for foresters.

WASTAGE AND STAGNATION

338 JORAPUR P B: Drop-outs in school education - rural conditions demand basic changes. Yojana 1970, 14(12), 19-20.

Study of percentage of school enrolment in various States goes to show that it is higher in industrially advanced States on account of higher percentage of literacy and per capita income. The problem of wastage has been examined giving figures from Mysore State as an illustration. The following remedial measures have been suggested to reduce wastage: 1) school hours and vacations should be so adjusted to suit the needs of the rural community which is predominantly agricultural; 2) adult education should be given importance; the emphasis should be on functional literacy.

339 RADHAKRISHNAN NAIR M: Project on potential dropouts. NIE Journal 1970, 4(5-6), 24-5.

With the help of the concerned headmasters and career masters the guidance wing of the State Institute of Education, Kerala, undertook a project to reduce wastage in 12 selected schools. Pupils who were likely to drop out were identified early enough and helped by teachers to continue in school. As a result the wastage percentage dropped from 10 to 8. The project involved no financial expenditure. Another advantage of the project was the increased awareness, on the part of the school staff, of the significance of the problem of wastage and the resultant desire to improve the retaining capacity of the school.

340 GUHA P: Education of women in India, a historical perspective. Education Quarterly 1969, 21(1), 1-4.

A review of the history of education of women in India from the ancient period to the current one has been made. It is pointed out that since independence, considerable, progress has been achieved in the sphere of women's education. The following aspects have been stressed: 1) since there still is an uneven development of education throughout the country, it is necessary to ensure minimum basic education to all in all regions of the country; 2) the scheme of girls' education should emphasise family education for parents as well as for children; family education should also become a part of the adult education programme; 3) in the scheme of girls' education, there should be special programme to equip them for work in the community; 4) a systematic programme of vocational guidance should be provided for all students, including girls.

341 MENON L N: Article 45 and primary education of girls. Education Quarterly 1969, 21(1), 5-8.

It is pointed out that the country should take appropriate measures to fulfil the Constitutional Commitment (Article 45) of providing free and compulsory education to all children up to the age of 14 years. Even if all the children of school-going age are able to go to school, there will still be the growing problem of illiterates of whom the majority will be girls and women. The need to close the gap in the progress of education of boys and girls and between rural and urban areas and to effectively tackle the evils of wastage, stagnation and lapse into illiteracy has been stressed. It has also been stressed that education, especially primary education should receive priority in the programmes of national development. The rural population, it is maintained, feel the need for girls' education and whatever prejudices there might be, have a basis in their own experience and needs which must be understood. The following suggestions have been given: 1) the policy of staffing all primary schools with women teachers should be pursued vigorously; 2) the money spent for rural social welfare and the entire amount allocated for pre-primary and family planning should be used for training and accomodation of teachers in rural areas; 3) candidates from rural areas should be given special incentives to go for teacher training.

342 PANANDIKAR S: Imbalances in the progress of girls' education - extent and remedy. Education Quarterly 1969, 21(1), 9-11, 21.

The trend of increase in enrolment of the age-group 6-11 since 1960-61 has been presented. Increase in the enrolment and attendance has been achieved due to 1) provision of mid-day meals and 2) introduction of some of the measures suggested by the National Committee on Women's Education (1959). However two of the measures suggested by the Committee - a) incentives to teachers for improving enrolment and attendance and b) attaching creches to primary schools in rural areas - have not been implemented. It is urged that these measures should be implemented and that the resources for these could be found by a little adjustment in the developmental schemes. With regard to the education of the age-group 11-14, that is the middle stage, it is advocated that there should be provision of part-time education facilities. The extent to which broadcasting can be used for part-time education should also be explored.

343 Reports on the progress of girls' and women's education in the States. Education Quarterly 1969, 21(1), 47-53.

Reports on the progress of women's education in the States of Andhra Pradesh, Madhya Pradesh, Pondicherry, Rajasthan and Tamil Nadu have been presented.

344 SARAN R: Voluntary organizations and women's education. Education Quarterly 1969, 21(1), 29-32.

The following are the ways in which voluntary efforts could be utilized to supplement the Government programmes in promoting women's education: 1) the National Social Service which has recently been sponsored in the universities can utilise the student potential in specific educational programmes; 2) individual volunteers, viz., non-student youth, retired persons and educated housewives and voluntary organizations, should be mobilised for the purpose; 3) in rural areas, the school teacher, postmaster, etc. should be drafted for voluntary educational work. These voluntary agencies could engage in part-time educational programmes. Daystudy centres where the needy student could get books and study facilities, may be opened. Post-elementary education must be job-oriented, the volunteers can help in running short-term job-oriented courses to students and housewives. Shortage of accommodation can be solved by 1) using the existing school and college buildings, and 2) using local material to put up structures in rural areas.

345 Personality tests in workers education. Workers' Education 1970, April, 10-13.

Workers Education Centre, Hubli conducted some psychological tests to adjudge the intelligence, educational achievement, aptitude and personality of the worker teacher trainees at the commencement of the course. Tests were given to groups of seven trainees. The following are the results of the tests: 1) five out of seven trainees were found to possess average intelligence; 2) the group knew about the Five Year Plans, workers education and trade unionism fairly well; but did not know about industry and labour legislations; 3) the trainees either possessed leadership qualities or potentiality for leadership; a good number possessed initiative, adjustability and are aware of social responsibilities; but more than 50% did not have enough will power, self-confidence and judgement of human behaviour; 4) nearly all trainees were found fit to become teachers; 5) almost all trainees possessed positive personality traits. It is observed that this kind of assessment could be used in devising a suitable training programme.

List of Periodicals Abstracted

Bhagirath, the Irrigation and Power Quarterly 1970: V 17, No 2
Economic and Political Weekly 1970: V 5, Nos 17, 21, 23
Education and Psychology Review 1970: V 10, No 2
Education Quarterly 1968: V 21, No 1
Educational Forum 1970: V 15, No 2
Educational Miscellany 1968-69: V 5, Nos 3, 4
Fertiliser News 1970: V 15, No 4
Haryana Journal of Education 1970: V 3, No 2
Indian Educational Review 1970: V 5, No 1
Indian Journal of Adult Education 1970: V 31, Nos 4, 6
Indian Journal of Mental Retardation 1969: V 2, Nos 2, 3
Instruments India 1970: V 5, No 2
Journal of the College of Education, Karnatak University 1970: V 7, Nos 1, 2
Journal of Education and Psychology 1970: V 28, No 1
Journal of Educational Research and Extension 1970: V 6, No 4
Journal of Psychological Researches 1970: V 14, Nos 1, 2
Journal of the Regional College of Education, Bhopal 1970: V 3, No 4
Kurukshetra 1970: V 19, No 7
Mainstream 1970, Nos 32, 40
Manas 1970: V 17, No 1
Manpower Journal 1969: V 5, No 1
NIE Journal 1970: V 4, Nos 4-6
Naya Shikshak (Teacher Today) 1970: V 12, No 3
Nursing Journal of India 1970: V 61, No 5
Progress of Education 1970: V 44, Nos 7-11
Psychological Studies 1970: V 15, No 1
Psychology Annual 1970: V 4
Quarterly Review of Historical Studies 1968-69: V 8, No 2
Quest in Education 1970: V 7, No 2
School Science 1969: V 7, No 4; 1970 : V 8, Nos 1, 2
Science and Culture 1970: V 36, No 2
Social Welfare 1970: V 17, Nos 2, 3
Swarajya 1970: V 17, Nos 45, 49
Teaching 1970: V 42, No 4
Technical Teacher 1970: V 4
Transactions of the SAEST 1970: V 5, No 1
Transport and Communications 1970: V 9, No 11
University News 1970: V 8, Nos 4-6
Vanyajati 1970: V 18, No 1
Workers Education 1970: April
Yojana 1969: V 13, No 25; V 14, Nos 10, 12

Newspapers:

Economic Times: 8 May; 7 June 1970
Hindu: 17 May 1970
Hindustan Times: 3 May; 27 June 1970
National Herald: 20 Apr 1970
Statesman: 20 June 1970
Times of India: 15 June 1970
Tribune: 26 Apr; 3, 10 May; 25 June 1970

SPECIAL SECTION

ECONOMICS OF EDUCATION - I

A28 AMIN R K, PATHAK M: Cost of education in certain faculties of Sardar Patel University. Artha-Vikas 1967, 3(2), 23-41.

The cost of education per student in the various faculties of the university has been estimated for the year 1964-65. The cost of education, which is also termed as the social cost, consists of a) student cost - i) individual cost, ii) institutional subsidy, and b) institutional cost - i) direct cost, ii) indirect cost. The following are the estimates of cost per student per year: 1) the faculty of Arts: - a) first degree - Rs.1455, b) second degree - Rs.3118; 2) the faculty of commerce:- a) first degree Rs.1661, b) second degree - Rs.2630; 3) faculty of science: - a) first degree - Rs.1721, b) second degree - Rs.5243; 4) faculty of engineering:- first degree - Rs.2957; 5) faculty of agriculture: - first degree - Rs.2174.

A29 BALJIT SINGH, HUSAIN I Z: Programme for economic research in educational planning (In Educational research, an interdisciplinary approach, report of a seminar. Delhi, Central Institute of Education, 1969. 93-108. 20 ref).

The criteria for allocation of resources among different levels and types of education can be based either 1) on perfect consumer's sovereignty or 2) strictly on long term projections for the manpower requirements created in the production process. The allocation of given resources on the basis of three approaches, namely: a) social demand approach, b) manpower forecasting approach, c) rate of return analysis, has been discussed. It is concluded that no single approach can result in the optimal solution. A combination of the three approaches is pleaded for. A brief outline of certain studies in economics concerning the field of education has been given to show the contribution that can be made by such researches to determine the size and pattern of resource allocation. The following areas of research that may be treated with urgency have also been indicated: 1) cost studies; 2) productivity studies; 3) cost benefit analysis; 4) educational finance; 5) programme analysis; 6) projection; and 7) models building and system analysis.

A30 CHAUDHRI D P, RAO P: Private and social returns to higher education, a case study of Delhi Graduates. Economic and Political Weekly 1970, 5(14), 605-8. 14 ref.

The private and social internal rates of returns to investment for the 1954 graduates of various degrees of the Delhi University have been computed on the basis of the following two alternative assumptions with regard to private costs: 1) the actual average expenditure of the Delhi University student on food, clothing, education, etc., as reported in A.M. Khusro's study (see Indian Educational Material 1967, Vol. 2, No.2, Abstract No. 270); 2) the actual educational expenses and transportation costs as reported in Khusro's study plus the earnings foregone by the student. The study has revealed that 1) private rates of return on all degrees are considerably higher than the all-India average (8.1%); these are even higher than what could be obtained from investment in the industrial sector of the Indian economy (16-20%); 2) the social rates of return on Delhi University education are considerably higher than the all-India average (7%); 3) a comparison of private rates of return on various degrees belies a few popularly held beliefs in the preference of specialisations and raises a few questions for the educational administrators regarding admission policies into various courses; 4) the internal rates of return, both private and social on all the degrees (except History) are consistently higher than those from engineering degrees (social rate 9.8% and private 13.5%) ; 5) higher education can be a paying investment even in a less-developed country like India.

A31 DEVARAJAN G: Rationale of investment in education. (In Investment in human resources. Bombay, Popular Prakashan, 1966. 22-32). 21 ref.

To maximise the returns from physical capital, there should be adequate support from human capital. A more increase in investment in conventional education in the underdeveloped countries would in all probability actually decrease rather than increase outputs. The limited funds that are available for investment in education in these countries should be placed where they will do the most good. On examining the present pattern of investment in education in the underdeveloped countries and Asia, shortage of 'critical skills' on the one hand and surplus labour of all kinds on the other are apparent. So a different pattern of investment in education is necessary. Since the shortage of critical skills is the major reason for the existence of surplus labour, priority should be given to secondary education from which trainable, high-level manpower is drawn. Next in importance comes adult education. All skill-building programmes should be set in the context of a manpower plan. Investment in education will become a waste if

proper incentives are lacking. Every effort should be made to avoid waste of investment arising out of misallocated skills, educated unemployed and 'drop outs'.

A32 DEY B: On costing of education. (In Pandit H N, Ed. Measurement of cost productivity and efficiency of education. Delhi, National Council of Educational Research and Training, 1969. 14-26).

An attempt is made to show the extent to which cost concepts relevant to manufacturing industries can be applied to educational industry. The educational costs are broadly classified into four categories: i) direct expenditure; ii) expenditure for meals and tiffins; iii) expenditure on students' health service and iv) expenditure on training of teachers. An empirical content is given to the cost classification scheme with the help of the data collected through a pilot enquiry of public health and educational services in an urbanised village in West Bengal for 1963.

A33 GRIFFIN K B, HURTADO C: Econometric approach to planning education. Economic Weekly 1964, 16(46), 1815-17. 8 ref.

Tinbergen and Correa have presented an econometric model ("Quantitative adaptation of education to accelerated growth": Kyklos 1962, 15(4), 785) which they believe can be used for the solution of a number of problems of long-term planning for education in developed and developing countries. Tinbergen - Correa model (T - C model) has been examined and it has been concluded that a) the T-C model is not useful in under-developed countries because it implicitly assumes that the existing educational system is desirable and need only be expanded; 2) the econometric model is not useful in growing industrialized nations because it assumes that for a given rate of growth the proportion of secondary school graduates to university graduates is fixed; that is the coefficients do not change systematically through time; 3) the model is not useful for short-term programming because its time unit of six years is too long for the assumption of fixed coefficients to be credible; 4) the model ignores most of the important problems of planning education, especially in an under-developed country. It is observed that it would be difficult to interpret T-C's purely quantitative model unless one is given simultaneously a wealth of information about qualitative and institutional changes. The claim that the model can be used for the solution of a number of problems of long-term planning for education is too ambitious, it is contended.

A34 GURBAX SINGH: Concepts in and methodology of measuring unit costs in education. (In Pandit H N, Ed. Measurement of cost productivity and efficiency of education. Delhi, National Council of Educational Research and Training, 1969. 42-5).

The possibility of double counting of fees and scholarship is pointed out. It is explained how the private cost can be duplicated, if expenditure at parent's end and that at the educational institution's end are both taken into account. Certain questions regarding valuation of cost of scholarship in the computation of unit cost have also been raised. The taxonomy of unit costs is presented.

A35 HARBHAJAN SINGH: Cost and quality of school education, a review of researches. Indian Educational Review 1969, 4(1), 125-34. 25 ref.

The study of cost and quality is a complex one involving the following issues: 1) formulating the criteria of quality in education; 2) controlling factors such as pupil's intelligence, motivation, health, socio-economic status etc. which affect quality; 3) identifying and computing the various categories of cost such as a) private cost, b) opportunity cost, c) institutional cost; 4) teachers' competence, motivation etc, which is a non-finance factor that affects the quality. A review has been done of 25 research studies undertaken during 1920-1963. It has been generally established that high quality schools spend more money per pupil than other schools, yet more increments in cost per pupil do not lead to increase in quality. It is suggested that the following considerations should be taken into account in the future researches: 1) quality at a point of time is likely to be related to expenditure over a period of time than to the expenditure at the given time; 2) a positive relationship between quality and past expenditure levels will exist only when the level of expenditure is the result of sound budgeting of resources; 3) quality does not depend on past expenditure alone, but from a combination of expenditure factors and other essential factors; 4) a specific problem which needs thorough examination in Indian secondary schools is the effect of specialisation (greater division of work) among the teachers with respect to subject matter areas upon the quality and efficiency improvement in the school situation.

A36 KOTHARI V N: Factor cost of education in India. Indian Economic Journal 1966, 13(5), 631-46.

The study aims to determine how large the draft made by education is on the resources of the community. The study is confined to only the formal education in the recognised schools, colleges and universities. Estimates of total factor cost of education in India are presented for the years 1950-51, 1956-57 and 1959-60. To measure the magnitude of resources used up in education the methodology adopted by T.W. Schultz of estimating the direct and indirect costs of education has been followed. After working out the upper and lower estimates of the total factor costs of education it is estimated that the earnings foregone in the total costs of education in India is 45% - 55%. It is found that the total factor cost of education expressed as percentage of net national income increased from 3.6% to 6.5% if upper estimate is taken and from 2.6% to 5.0% if lower estimate is taken. Similarly it is found that the total resources devoted to education expressed as ratio of net investment, remained constant at .60 for the upper estimate and at .45 for the lower estimate. Comparing India with the USA, it is revealed that India spends nearly as much on education as is being done by the USA at a far more advanced stage of development. Again, comparing the relative cost of schooling for various stages of education, it is found that the higher stages of education are relatively costlier in India than in the USA. The cost ratios relative to per capita income reveal that all stages of education make relatively higher demands on resources in India than in the USA. It is observed that this finding is extremely suggestive and has an important bearing on India's ability to improve the quality of education.

A37 KULKARNI G B: Cost of education in commerce colleges of Bombay 1962-63 to 1966-67. (In Pandit H N, Ed. Cost productivity and efficiency of education. Delhi, National Council of Educational Research and Training, 1969. 114-20).

The study reveals that unit cost at current prices had increased from Rs.316 to Rs.453 during the period. It also shows that the pupil-teacher ratio went down from 33:1 to 25:1. Despite this trend, many of the teachers in the commerce colleges were leaving the profession. The reason for this might be two-fold: 1) the increased emoluments available in alternative jobs; 2) increase in the work-load of teachers during the period.

A38 NADKARNI M V: Some definitional aspects of investment in human capital. (In Investment in human resources. Bombay, Popular Prakashan, 1966. 52-8) 14 ref.

The elements of consumption and maintenance should be excluded from the definition of investment in human capital, though they may have the effect of increasing or maintaining human efficiency. Only such outlays are considered as investment in human capital, that increase human productivity or earning power directly and not through the satisfaction of 'wants'. This restricted definition does in no way reduce the importance of expenditure on public health recreation etc. Just to emphasize the importance of a certain expenditure, the definition of investment need not be broadened to include it. It is well known that investment alone is not conducive to economic development. An increase in consumption levels has also a contributory role in the process of development.

A39 PADMANABHAN C B: Recent trends in economics of education and economics of educational planning. Tamil Nadu Education 1969, 3(3), 19-24.

In this survey, the developments in economics of education and economics of educational planning since 1960 are discussed. A distinction is made between economics of education and economics of educational planning. The idea underlying economics of education is that education is an investment and therefore all aspects of educational activity will have to be subjected to the criteria underlying any investment activity. But economics of educational planning is concerned more with educational planning and in this the developments in economics of education are utilised in full, without, however limiting to the considerations to which theories of economic growth will limit themselves. The growth of literature in these fields has been traced. The following aspects have been discussed in this survey: 1) measurement of the contribution of education to economic growth; 2) education as the cause or the result of economic growth; 3) models for educational planning such as social demand approach, manpower approach, rate of return approach etc; 4) cost-benefit criteria; 5) methods of financing education, the magnitude of finance, cost, productivity and efficiency of education.

A40 PANCHAMUKHI P R: Educational capital in India. Indian Economic Journal 1965, 12(3), 306-14. 18 ref.

An attempt is made to give some estimates of the resources that are entering into all types of education in India. Attention is focussed on the costs of formal education, on the job training and training in the armed services. The estimates of the costs of formal education for 1950 to 1959 and of other types for the years 1957, 1958 and 1959 have been worked out. The following observations have been made: 1) considering the period of ten years, the general education costs is about seven to eight times the professional education costs; 2) the social costs of education which were neglected so far are nearly 40% of the total costs; hence the neglect of such hidden costs obscures the whole picture of educational costs; 3) comparing India with the USA and Germany, it is observed that the percentage of educational investments to physical investments is highest in the case of India but it is not moving uniformly; this is due to the uneven growth of physical investments; for quicker industrialization, the rate of growth of educational expenditure must be higher than the rate of growth of physical investments; 5) total cost of education (i.e. the costs of formal education, on the job training and training in the Armed services) for 1957 to 1960 is 5% to 6% of the National Income whereas it is 11.8% to 12.9% in the USA. The need for more expenditure on the part of the public sector is stressed.

A41 PANDIT H N: Economic approaches to investment decision-making in education. Indian Educational Review 1970, 5(1), 1-54. 137 ref.

The economic and econometric approaches to investment decision-making in education are critically appraised. The major strengths and weaknesses of the rate-of-returns criterion, manpower-planning approaches, human resources development strategies based on international comparisons, income and educational expenditure correlation analysis, etc. are pointed out. Combining the rate-of-returns criterion and the manpower-requirements approach with the help of a linear programming model is suggested. A mixture of the principles of maximization of national income and minimization of unemployment among educated persons is proposed as the objective function of the model. The constraints to be imposed on this objective function will be in the form of physical and manpower resource availabilities and the socio-economic manpower needs of an economy.

A42 PANDIT H N: Study in unit costs at the school stage in India, a design of the research project. (In Pandit H N, Ed. Measurement of cost productivity and efficiency of education. Delhi, National Council of Educational Research and Training, 1969. 3-13).

The unit on economics of education in National Council of Educational Research and Training (NCERT) has planned the research project the major aims of which are 1) to estimate the unit cost of education at school stage; the units for the purpose of measurement are a) student; b) class; c) institution; 2) t locate factors which cause variations in the unit costs; 3) t tudy unit cost in relation to the 'internal and external effic.ency' of school stage. An overall summary of issues involved in selecting items of costs, unit for measurement and indices for measuring the quality of output has been given. The organizational aspects of the research project as envisaged by the NCERT have also been presented.

A43 PAUL S: Management education, social costs and returns. Economic and Political Weekly 1970, 5(22), M46-M52. 16 ref.

It is pointed out that some observers have argued that much more is spent on management education than on management research and consultancy although the latter's pay-off have been higher (See Indian Educational Material V 5 No 1 Abstract No. 33). This paper seeks to apply cost-benefit analysis to evaluating institutions set up for imparting management education. The major conclusions are: 1) social cost-benefit analysis can be adapted to provide a useful conceptual framework for the economic evaluation of educational programmes, the nature of costs and returns is such that of all forms of education this approach seems most relevant to the evaluation of management education; 2) the results of the social cost-benefit analysis of the Indian Institute of Management, Ahmedabad, attempted here show that allocation of resources for management education at the national level is justified even when judged under the most pessimistic assumptions about costs and returns.

A44 RAO V K R V: Education as investment. (In Baljit Singh, Ed. Education as investment. Meerut, Meenakshi, Prakashan, 1967, 4-16).

Expenditure on education constitutes an important form of investment in economic development. Investment criteria are therefore quite relevant in determining the volume and content of education. Skills

and attitudes pertinent to the promotion of economic development constitute a necessary, though not exclusive end-product of education; and not only the content but also the methodology and the technology of education have to be formulated for the achievement of this objective. Within the educational system, priority has to be assigned to its different sectors, depending upon the stage of development and its manpower and attitudinal requirements. The development of human resources is the cardinal objective of education in a developing economy. It is the maximization of returns from investment in education that determines its contribution to the social and economic development. Hence, the importance of viewing education not merely as a final consumption good, but also as a capital good that enables man to get the best out of his environment.

A45 ROY P K: Education and economic growth. (In Mathur V S. Crucial problems in Indian education. Delhi, Arya Book Depot, 1970, 106-13).

The economic aspects of education have been discussed. Since education is an investment, it is necessary to prevent wastage and to ensure maximum benefit from it. This involves efficient planning. The question of priorities to be given has to be decided. The following suggestions have been made: 1) at the primary stage, the existing schools should be strengthened rather than opening new ones; attention has also to be given to the content of primary education and teacher training; 2) it is necessary to develop a comprehensive philosophy for the secondary stage instead of merely orienting it to the needs of university education; agricultural education should be stressed; 3) university education also needs to be modified in the light of economic demands; the needs of the community must be translated effectively into the courses of study; continued indiscipline in educational institutions would be detrimental to economic development, hence all efforts should be taken to root out indiscipline and unrest; to avoid wastage of effort and money university education should be made available to only those students who have aptitude and ability; 4) although economic demand is an important determinant of educational policy, the social, cultural and spiritual objectives of education should not be lost sight of.

A46 SHAH K R: Private costs of elementary education. (In Pandit, H N, Ed. Measurement of cost productivity and efficiency of education. Delhi, National Council of Educational Research and Training, 1969. 57-74).

The importance of non-tuition expenditure is emphasised. It is

contended that the fees are not considered as a burden by the relatively affluent parents. The study reveals that non-tuition expenditure is usually low in the case of children coming from poorer families.

A47 SHARMA D L: Unit costs of education, our knowledge, gaps and our needs. (In Pandit H N, Ed. Measurement of cost productivity and efficiency of education. Delhi, National Council of Educational Research and Training, 1969. 27-41).

The importance and nature of unit costs required at different levels of education with special reference to Indian conditions as at present and their role in measuring various inputs and outputs have been dealt with. The nature of available educational statistics, their coverage, gaps and their limitations have been pointed out. A method has been developed to utilise the existing statistics in measuring the cost per student at different levels of school education and to find out the extent of wastageof resources on account of drop-outs and stagnation. Measuresare suggested for improving the present method of collection of cost data by the government agencies in the country. Taxonomy of costs is given in the appendix.

A48 SRIVASTAVA R K, SURYANARAYANAN S S: Econometric approach to planning education, comment. Economic Weekly 1965, 17(11), 491-2.

Some limitations of the Correa-Tinbergen (C-T) model, which considers the quantitative interrelationships between the educational system and economic requirements of certain levels of manpower by means of linear difference equations were discussed by Griffin and Hurtado (See Indian Educational Material Vol. 5, No2 Abstract A33) and it was concluded that the types of problems the model is designed to solve are not the problems on which economists working in the under-developed countries are much concerned. The authors do not agree with this sweeping criticism of the C-T model. Obviously econometric approaches of the C-T type to educational planning would have somewhat limited applicability in developing countries which carry a large backlog of educated unemployment and where timeseries data on various aspects of economic and educational development are not available. No model can approach and simulate real situations fully either. It is also difficult to quantify the different non-economic factors that affect the growth and development of education. The initial focus in developing a model has to be placed on quantitative aspects and measurable variable (to the comparative neglect of qualitative aspects) and a high degree of

aggregation is unavoidable. The limitations, however, do not constitute sufficient ground for rejecting the model on qualitative or a priori considerations.

A49 VENKATESHWAR RAO H: Educational costs, concepts and issues (In Pandit H N, Ed. Measurement of cost productivity and efficiency of education. Delhi, National Council of Educational Research and Training, 1969. 46-56). 12 ref.

Certain economic aspects of education which are believed to have a definite bearing on the costs of education have been considered. Analysing the concept of the cost of (higher) education, it is pointed out that the inclusion of the following items into the scope of costs is controversial: 1) cost of university research; 2) students maintenance cost; 3) costs incurred on auxiliary services. Further, in a labour redundant underdeveloped economy, there is no reason to include opportunity cost. It is observed that it is not possible to obtain an accurate measure of total costs and that an investigator should aim at a satisfactory feasible estimate of costs rather than an ideally accurate figure. Discussing the problem of definition of a unit in cost studies, it is remarked that in estimation of outlays for universal primary or secondary education, 'an optimum institution' may be an appropriate unit. In matters of attainment of targets of skilled manpower of various scientific and technical categories, duration of professional course as a unit is relevant.