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OUR GRATITUDE
ALL INDIA ASSOCIATION FOR EDUCATIONAL RESEARCH
Offers Gratitude to'
NALINI DEVI EDUCATION TRUST
Kharavela Nagar, Bhubaneswar
for its generous financial assistance to bring out
the Journal of the Association

DATA BASE OF INDIAN EDUCATIONAL RESEARCH

The Data Base of Indian Educational Research has been developed by Prof. M. B. Buch on behalf of the Society for Educational Research and Development, Baroda. It covers all research studies on educational problems in the country from 1857 to 1988. The studies have been classified into 29 categories viz : (i) (1) Adult education, (2) Comparative education, (3) Correlates of achievement, (4) Creativity, (5) Curriculum, (6) Economics of. education, (7) Education of weaker sections of the society, (8) Educational management. (9) Educational technology, (10) Examination and evaluation, (11) Guidance and counselling, (12) Higher education, (13) History of education, (14) Language education, (15) Mathematics education, (16) Non-formal education, (17) Philosophy of education, (18) Pre-school education, (19) Psychology of education, (20) Science education, (21) Social science education, (22) Sociology of education, (23) Special education, (24) Teacher education, (25) Teaching, (26) Tests and measurement, (27) Universalisation of elementary education, (28) Vocational and technical education and (29) Women's education. There is a programme of retrieval and any information about researches in a university or in a period of time or in an area of research giving the volume numbers of the Survey of Research in Education (4 Surveys) and the titles can be retrieved-from the computer. According to Prof. Buch, the data have been stored in the computers of NIEPA, NCERT, IGNOU, JNU, Education Department of Devi Ahilya University, Indore, Gujarat Vidyapith, SNDT Women's University, Bombay University, Department of Psychology, Poona University, and Hubli Engineering College. The All India Association for Educational Research will have these facilities in near future and it will also provide service to researchers.

MESSAGE

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All India Association for Educational Research

Every professional association should have its journal. The professionals have to support it Educational research in India is no moire in infancy- It is growing in stature. Every thirty six hours a research report in education comes out in this country. The findings of research need proper dissemination. This journal should specially aim at dissemination.

The association though young, has started its activities on the right lines. With the mobilisation of the professional support, I am sure the association will carve out a place among social scientists in India as well as educational research abroad. I wish the association and the journal a bright future.

Sd/-
M.B.Buch

MESSAGE

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All India Association for Educational Research.

I am delighted to know that the All India Association for Educational Research is bringing out the. first issue of its Research Journal. I hope the Association will grow from strength to strength and the Journal will be a useful means of promoting research by disseminating the findings of educational research.

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SETTING PRIORITIES FOR RESEARCH IN TEACHER-EDUCATION

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On a perusal of the first, second and third surveys of Research in Education, edited by Prof. M.B. Buch, it becomes evident that teacher education is not a neglected area of research. However, it is not the most attracted area either.

Research in Teacher Education can be of different types. They are really so. Starting with the philosophical and sociological aspects or foundations of teacher education, one can definitely pass through pedagogical as well as andragogical aspects and study the past and present with a view to make projections for the future. The unprecedented .explosion of science and technology and their intervention in the education scene have had a multiplied effect in the use of audio visual techniques or rather educational -technology in all facets of education and especially in teacher education.

It took a long time to replace "teacher training' by teacher education. Now many are for teacher preparation. The row between competency based teacher education and performance based teacher education is not over. There are 'great teachers' who are either 'born' or 'made. This controversy also persists in *the* educational arena. Teaching is considered both as an 'art' and a 'science'. All these inherent controversies make the field of teacher education a lively one.

In addition to this, while a section of teachers are compelled to undergo both -pre-service and inservice teacher education courses, another group, mainly of the higher level teachers in colleges and universities are not subjected to such an orientation feeling it either not necessary or superfluous. Any way, the UGC has come forward to support as many as 48 academic staff Colleges in the country. The chances of getting the ASCs .accepted by the teachers working in higher education institutions and the real working styles and outcomes of these are to be viewed seriously and critically.

The aims and objectives of the Academic Staff Colleges and the modus operandi followed in these, the selection of participants and resource personnel, the strategies and techniques adopted, the evaluation results (self, internal and external) are all subjects of research of contemporary importance. This can be an ongoing research in, the area of teacher education, with a view to effecting necessary changes based on findings and monitor the programme effectively.

Why the attempts at introducing teacher education of some, type or the other in colleges and universities failed, is also another interesting area of investigation worth undertaking. Is it lack of motivation and incentives on the part of the teachers or is it due to its eventuality and non usefulness that it was discarded, has to be found out through a careful and unbiased study.

Without pedagogical inputs can a teacher be effective and if so at what level can be another study. The organisation and conduct of inservice programmes is another strategic area for investigation in all Indian States. The opinion of teachers on the efficacy of such .courses needs to be ascertained to bring in necessary changes and to adopt appropriate technologies.

Participatory approach in the teacher education process is yet another area. This need not be restricted to the practical aspects wherein micro-teaching can be used as an innovative technique, games .etc |In the skill development process, programmed learning approach can be attempted successfully. All/these can be subjected to experimental research, selecting viable samples and areas.

In many cases there exists a gap in the communication process. Even if the teacher has subject matter competency, his viability to communicate *ai:e:zWa\j* ani present ideas in an interesting way, his success as a good teacher will be in question.

Case studies of innovative practices of award winning teachers and institutions. Similarly, successful decision making strategies as revealed through case studies may be compiled and disseminated as guidance for prospective teachers and new entrants.

The reading habits of teachers at various levels, if studied and reported, will be of great interest not only to the teaching community but also to the community at large.

Though it is not quite clear as to whether we have reached such a stage, it may be curious enough, to study pupils' evaluation of their teachers. A comparative study classifying teachers according to sex, qualifications, experience, academic subjects, socio-economic status, intelligence, political affinity, membership in teachers organisations, involvement in community work etc. would also be of genuine intrest to all concerned,

The evolution of teacher education strategy is yet another area of importance in the historical perspective. The wastage incurred in the teacher preparation programme is one of the significant areas of research. In this case, the influence of teacher preparation course on mothers (even if they have not become teachers) may also be studied scientifically.

Preparation and standardisation of a teacher evaluation schedule, teacher aptitude test and an interest inventory for teachers. Teacher qualities expected by students, parents and members of different sections of the community etc., are worth ~ attempting.

Why many educational journals disappear even before completing 2-3 years has to be enquired into. Educational journalism with special reference to teacher education can he an active branch for research.

In the non formal sector, training has been conceived as one of the weakest links. Why this is so and how it can be improved are to be studied. The difference in role expectations and actuals in the formal and non formal education fields, from the point of view of teachers needs to be ascertained and followed up.

Why not every' teacher take up at least a small piece of action research every year ? Can't we make this as a part of his regular responsibilities ? Can't we give credit to this ?

While we are trying to implement the New Education Policy of 1986 which is directly and indirectly interested in ensuring better teacher effectiveness^ it is the duty of every teacher*educator (if not all teachers) to equip themselves better through continuing education and self study. As torch bearers, teachers have to be always learning and in this process research and extension cannot be ignored. Various factors are likely to influence in getting priorities of research and it will vary from place to place, individual to individual and institution to institution. Contemporaneity, meaningfulness, practicability, replicability etc., are some of the criteria to be followed in fixing priorities.

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EXPERIMENTS WITH B. ED. TIME-TABLE

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In the training colleges, lectures are not the only thing, Co-curricular activities are* an integral part of the curricular work and proper care should be taken in organizing and conducting these activities. The two-dimensional training programme has to-day become three dimensional—(i) lessons or practice-teaching, (ii) Lectures—the theory part and (iii) Training in conducting and organising S. U.

P. W. activities and , co-curricular activities. In order to implement the third dimension, it was felt that more periods in the timetable should be allotted for curricular activities.

Just as much is expected from the teachers by the society so also the expectations from the training colleges are high. Colleges of education should not only develop[1'] the skill of teaching but also train the pupil-educators in how to bring about the all-round development of the school going child.

The new policy of education has thrust on the colleges of education— the responsibility of training teachers in S. U. P. W. (Socially Useful Productive Work). This is further emphasized because of vocationalization of education.

When any new introduction is there in a programme which is already so tightly packed then the first and yet a vital question that is raised-where is the time for all this ?

The teacher educators realise the importance of these activities and yet all these have to find a place in the timetable without an increase in the working hours. So the need of having extra time stretches to the extent of increasing the duration of the course from 1 year to 2 years. Increasing the duration is definitely not a feasible solution. The quantum of lectures also cannot be reduced. Our college thought of finding a solution to the two-fold demand- (1) More time for curricular activities, (2) Regular period throughout the year in the time-table for training in S. U. P. W.

Drastic changes were contemplated in the practice-cum-lecture system. The timetables of the previous years were studied. Four significant observations were made- (l) The total number of lessons observed per week was 180, (2) Only three practice-teaching days per week were available, (3) 50% of the student population of the: college was free i. e. unoccupied during the practice teaching days. (Frankly speaking -waste time), and (4) The methods occupied a number **of** periods **of** the time-table. This was because **of** the various permutations **of** the methods i.e. we had seven methods requiring 12 periods per week in the timetable. Keeping these observations in mind the following course **of** action was taken.

(1) The entire student population was divided into two divisions according to the medium of instruction they chose i. e. Marathi Medium and English Medium.

(2) Two days **of** the week i. e. Mondays and Tuesdays the Marathi Medium students attend lectures while on those days the English Medium students gave lessons, and vice-versa on Thursdays and Fridays. On Wednesdays and Saturdays all the student and all the staff attended college. These two days were used mainly for lectures and guidance.

This increased the practice-teaching days from 3 to 4 without reducing the 3 lecture days This also helped to solve problem No. 3. 50% of students attended lectures and 48 out of the remaining 50 gave lessons and observed lessons. Only two staff members came to college on lecture days leaving *8 others to observe lessons. Also the total number of lessons observed per week increased from 180 (in the old system) to 192 in the new system.

(3) The entire class was divided 'according to their methods into 3 groups— A, B & C. Group A comprised of .English-L.L., Science-Marathi Medium, Mathematics-English Medium, 1/2 Marathi (Random group), Hindi H. L., Geography-English Medium and Sanskrit. Group B comprised of English-H. L., Science-English Medium, Mathematics- Marathi Medium, Remaining 1 / 2 Marathi, Geography-Marathi Medium and Hindi L. L. Group C comprised of the entire History Method students. This group was independent because it had combinations with many methods. All the method-lectures in each group were held simultaneously. Each group was given two periods in the timetable per week. Therefore, the total number of periods required per week were 6 as against 12 in the earlier timetable. There was a net saving of 6 periods.

(4) In the earlier system while the practice-teaching programme went on there were 4 lectures per month per section. This was also maintained by dividing the timetable into two units. Each unit was of 5 days duration i. e. each section had two lectures i. e. 4 lectures per month. Even after completion of practice-teaching the method group formed functioned.

This new system of working helped the student to finish lessons earlier with ease, without haste and without tension. Also the time was found to conduct the curricular activities by allocating regular periods in the time-table. In designing this system total number of working hours has remained the same as per the requirement of the University. The periods now available were increased to a large extent - that it was jokingly remarked - "WE CAN HAVE FIVE DAYS WEEK" .

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INSERVICE EDUCATION AND TRAINING OF HEADS OF SCHOOLS AND PRIMARY SCHOOL INSPECTORS

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Inservice education and training of teachers is necessary for educational system. The Education Commission (1964-66) pointed out that, "The need for inservice education and training of teachers of India is most urgent in the teaching proffession, because of the rapid advance in all fields of knowledge and continuing evolution of pedagogical theory and practices'[9] (p.152). The National Policy on education 1986 also gave importance on inservice education. According to it "Teacher education is a continuous process and its pre-service and in-service components are inseparable", (p.26). On the eve of introduction of the new education policy mass inservice programmes were initiated in summer 1986, In Orissa .the orientation programmes covered heads of schools and sub-inspectors of schools.

Study of the view of participants of a centre :

The participants of a Mass Inservice Training Centre for Secondary level were asked to give their opinions on certain aspects. The findings were as follows :

(a) Previous training of participants :

80 per cent of the participants had received training during their career. The areas on which training had beefr given were Geography teaching, English teaching, Science teaching, Mathematics teaching, Teaching of environmental study, 'Population education and Utilisation of television programmes. 20 percent of the participants, though working as heads of institutions had received no inservice training. This indicates inadequate provision for in service training.

(b) Publication of participants :

Only 2 per cent of the participants had some publictions to their credit. In-service provision can not cover all aspects. A teacher need to study on his own and write his experiences for the benefit of others. Hence there is a need for encouraging teachers to have publications.

(c) Importance to different topics of the programme according to participants :

The programme consisted of presentation of modules developed by the National Council of Educational Research and Training and National Institute of Educational Planning and Administration, New Delhi. The perception of importance of various topics by the participants depended on the manner in which the modules had been prepared and the manner in which they were presented. Majority of participants were satisfied about the topics—New education- policy, National integration, Improvement of teaching aids, Mathematics teaching, Science teaching and Mass media. This indicates there was something wrong either in the preparation or in presentation of modules on the remaining, subjects.

(d) Need for more training :

The participants expressed need for more training on different subjects as follows : -
English teaching, Science teaching, Mathematics teaching, History teaching, Geography teaching, Civics teaching, Economics teaching, Teaching of Music, dance and painting, Health education, Learner centered education, Population education, Contemporary India and Education of slow learners.

While designing future programmes, instead of having common programmes for all participants, it maybe useful to ascertain needs of various target population and design programmes accordingly. This is necessary as the priority given to a particular topic differed from participant to participant.

(e) Utilisation of community resources :

Only 30 percent of the participants favoured utilisation of community resources by the school. Sixty percent participants did not find it a feasible proposition. Remaining 10 percent were silent. The community resources which according to the participants could, be utilised by the schools were as follows :

Material resources :

Library of the locality, playground and physical education facilities of the locality, furniture, audio-visual equipment and science materials.

Human resources:

Lectures from the colleges, renowned artists, health department officials, skilled-persons such as farmers, weavers, carpenters, washermen, etc.

(f) Socially Useful Productive Work :

Majority (64 percent) of the participants were in favour of S.U.P.W. But they did not have the 8 periods for S.U.P.W. per week as stipulated in the Courses of Study- prescribed by the Board of Secondary Education, Orissa. The activities that could bev undertaken during School hours were : Making of kites and paper flowers, sewing of small garments, making mats, making baskets from bamboo, bee keeping, gardening, carpentry and food preservation. The activities which could be undertaken outside the school campus were plantation of trees, repairing of roads, white washing walls of poor villagers, teaching farmers about use of pesticides and improved technology in agriculture, population education and adult literacy work. There were suggestions for the training of students of industrial areas in the nearby industries such as cement factory, spinning mill, sugar factory, steel plant, cotton mill, oil mill, diary, etc.

(g) Problems faced by participants :

The participants pointed out following problems that stood on the way of the qualitative improvement of the educational system and the introduction of the new national education policy. These problems were :
(i) Lack of residential accommodation near school (66%)
(ii) Inadequate salary (66%)

(iii) Delay in payment of salary (20%)
(iv) Too much correction work (20%)
(v) Heavy work load (20%)
(vi) Teaching to weak students outside school hours (20%)
(vii) Troubesome'parents (8%)
(viii) Political interference (8%)
(ix) Student indiscipline (4%)
(x) Transfer from place to place (4%) .
(xi) Inertia in educational administration (4%) [1]
(xii) Poor quality of assistant teachers (4%)
(xiii) 111 health of participants (2%) and
(xiv) Quarrel among teachers (2%)

Conclusion :

The opinions presented above are of the heads of schools (secondary) and school sub-inspectors (primary). Since the levels of education are different, the problems will be-different. Hence separate training programmes are necessary. Separate study of opinions of these groups also is necessary. The programmes should have certain component on management of schools. The first problem pointed out by the participants need immediate attention of the authorities. Unless the head of the institution lives near the school, he can not be able to do much. Every school should have residential accommodation at least for its head so that he or she can give more time for the welfare of the school. This study is a small study. Its findings cannot be generalised.

References :

1. Ministry of Education (1966) Report of the Education Commission (1964-66)* New Delhi : NCERT.
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TRAINING FOR COLLEGE TEACHERS

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Recently stress has been given on the training for college teachers. The University Grants Commission has set up 48 Academic Staff Colleges in different parts of the country for the purpose. This training is being given on the assumption that all teachers are not born teachers. The content area in every subject is growing at a very fast rate. It may not be possible on the part of every teacher to study new areas with the help of his own resources. The techniques of teaching also get improved continuously. The teacher needs to get training in these newer techniques. Training is needed for new teachers as well as for old teachers. While new teachers need orientation courses, the old teachers need refresher courses. In such a situation, let us have a look at some of the viewpoints expressed by the researchers and educationists in a few foreign countries and in India.

Training for teachers of higher education in foreign countries:

Training for teachers of higher education exist for many years in many developed countries. Knowles (1977) reported that in the year 1961, the Tertiary Education Research Centre was established at the University of New South Wales, Australia to carry out research and development activities aimed at improving the university teaching learning processes. Kelly (1979) reported about individualised training programme for college teachers. Marsh (1979) referred to job centered expansion of inherent capabilities of individuals.

Bobkov (1981) reported that in the year 1966, compulsory in-service training for academic staff, to be conducted at five years intervals, was introduced in U.S.S.R. Dorp (1981) reported that during the years 1963 to 1969, centres for research and development of teaching in higher education was established at every university in Netherlands. Goldschmid (1981) reported about in-service education programmes at the Lussane University of Switzerland. Kiel (1981) reported about the provision for training of teachers of higher education being made in the German Democratic Republic. Piskanin (1981) reported that since 1950, in-service training programmes for teachers of higher education were going on in Czechoslovakia. Bakhtar (1982) made a study on the typology of lecturing styles. The study reported 60 lecturing behaviours. Important findings of **PAGE 10** this study were:(i) lecturing styles were not significantly different according to years of experience, (ii) lecturing styles were different according to subject areas, (iii) the common weaknesses found lecturing styles were saying too much too quickly and assuming too much knowledge on the part of the students. An analysis of lecture indicated five clusters, which were (i) oral lectures, (ii) exemplaries, (iii) information providers, (iv) amorphous and (v) self-doubters. Cryer (1982) reported various activities undertaken for training of teachers of higher education.

Glenn (1987) in a study or faculty development programmes in member institutions of American Association of Bible Colleges recommended a model Programme. Various aspects of the programme were (i) adequacy of policies, structure, budgets and time, (ii) transition from usual dominant leadership by the chief academic officer to a more shared leadership by the faculty, department chairmen and students, (iii) special training for leaders and participants, (iv) consultation, if affordable, (v) more advanced methods of needs assessment leading to a balanced programme serving all faculty, (vi) continuity, (vii) formative multiple evaluation practices, (viii) co-operate system for advanced studies, (ix) less frequent or more effective use of traditional practices, (x) an emphasis on educational methodologies, outside experts, peer co-operation practices, new faculty assistance, research dissemination and other practices, (xi) a transition to vocabulary participation, promotion and encouragement and (xii) programme evaluation leading to enhanced effectiveness.

Main (1987) conducted an international survey of training of teachers of higher education. There were various types of introductory programmes, such as (i) practicum apprenticeship (F. R. of Germany and Sweden), (ii) mediated self-confrontation and self-review with the help of audio and video techniques. coupled with peer and student feedback in normal classroom situations (Israel and F. R. of Germany), (iii) Peer training (Sweden and U. S. A.), and (iv) workshop modules (Australia and Canada). The survey reported about the system of centrally organised training of tertiary teachers subject to public examinations in certain countries of the Eastern Europe. The German Democratic Republic had a systematic programme that produced accredited teachers of higher education on the basis of the success of the trainees in examinations consisting of viva-voce, practical test and essay. Certain universities of Australia and U. S. A. were reported to have developed mini courses for .training of teachers of higher education. The study reported various types of inservice training programmes such as (i) advanced courses, (ii) part-time courses, (iii) self-learning activities, (iv) national and regional activities, (v) international courses and (vi) specialised courses.

Training for teachers of higher education in India:

The University Education Commission (1948-49) suggested various strategies for improving quality of lecturing. These were (i) keeping eye on the audience to see to what extent the students are responding to

ideas of the teacher, (ii) putting **PAGE 11** questions on significant points to students during the course of the lecture, and (iii) mentioning important points on the blackboard. Commission pointed out the necessity for updating knowledge of teachers through self-study and research.

> "No teacher who is not a master of the field, who is not in touch with the latest developments in his subject and who does not bring to bear upon his duties a free and untrammeled mind will ever suceed in inspiring youth with that love of truth which is the principal object of higher education. Nor is the mastery of a subject. possible without a seeking for more knowledge, for knowledge is never complete and 'is always advancing and a teacher who is not a fellow traveler in this exciting pursuit and who stands merely watching others, misses the thrill of adventure which is potent a stimulus of thought."
>
> (Ministry of Education 1949, pp.68-69)

The Commission suggested for more use of familiar languages so as to facilitate better learning on the part of the students. It also suggested refresher courses for intermediate colleges. The Report of the Education Commission (1964-66) pointed out the necessity for training of teachers of higher education. The Commission stated the importance of such training in the following words:

> "The tradition in India has been to regard training for college lecturers as unnecessary. Born teachers who can dispense with training certainly exist. Many are keen, devoted scholars. whose scholarship may win over the respect of the students-though this is not always a safe presumption-and may thus be able to discharge their function satisfactorily in spite of professional inadequacy. But the bulk of teachers unfortunately do not fal1 into these categories. For them some suitable form of training and orientation is essential, not only to overcome their initial 'teaching' troubles and to create a sense of confidence, but also to give them a reasonable understanding of educational objectives and purposes, the *raison d'etre* and place of their special subject in the curriculum, of new methods and techniques of teaching and learning, and a knowledge of psychol0gy on which good teaching should be based. No question of amour-propre should be involved. In most highly skilled profession and education is certainly one-training is regarded as an essential qualification."
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> (Ministry of Education 1966. p. 154)

Some important suggestions of the Commission were as follows:

1. Newly appointed lecturers were to be given some time and opportunity to

(a) acclaimatize themselves to the institution,

(b) learn the traditions and patterns of work,

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(c) to get to know their colleagues and students,

(d) study the syllabus carefully,

(e) Prepare a detailed programme for the teaching work they propose to undertake.

(f) draw up their schemes of lectures,

(g) consult the library,

(h) select books to be recommended to students,

(i) discuss the above said activities with the senior colleagues and heads of departments,

(j) attend the lectures of some senior teachers of their subjects and study their methods of teaching and ways of handling students, and discuss observations made with them, .

(k) enable senior colleagues attend the lectures of new lecturers and discuss their observations with them.

2. Organisation of regular orientation courses for a few weeks early in the session in which some new and some older teachers participate. The programmes will consist of

(a) discussion by best teachers of the institution-as well as some distinguished teachers from outside on the outstanding problems of teaching, research and. discipline as well as the mechanics of the profession,

(b) facilities for new teachers to make social and academic contacts and find their feet in the new environment.

3. Establishment of institutions like staff colleges on a permanent and continuous basis in each bigger universities and a group of universities. The activities of these colleges are to include:
(a) Organisation of orientations, discussions, seminars, workshops.
(b) Publication of brochures, book lists, guidance materials, etc.

Kapruan (1974) reported about varieties of programmes for training of teachers of higher education such as the programmes of Technical Teacher Training Institutes and programmes run in Karnataka. The paper also referred to the Report of the Male Committee of U. K.. The paper suggested that the training programme for teachers of higher education should consist of psychology, pedagogy and practice teaching, Katiyar (1974) pointed out the need for training of teachers of higher education. Singh (1974). suggested a programme of 35 week duration. Desai (1975) reported that a. large number of **PAGE 13** comparatively young teachers did not possess and adequate language skill and the desirable clarity to the problems .of English teaching. Kapur (1975) suggested a summer course of 4to 6 weeks duration for every teacher as a. condition for confirmation. He also suggested that every university should set up a teaching improvement unit capable of organising evening lectures, seminars and discussion groups on various teaching-learning situations.

NCTE (1978) document entitled "Teacher Education Curriculum-A Framework" suggested a programme of one semester duration "to provide some pedagogical theory and general methods of teaching to college teachers in order that they may use more effective techniques than the traditional types of lectures and practical in teaching college students" (p. 22). Various areas to be Governed by this course were
1. Pedagogical theory:
    (a) Teacher and education in the emerging Indian society.
    (b) Educational psychology.
    (c) Study of the Indian Youth in psychological and sociological perspectives.
2. Core training programme package.
3. Special training programme package in subject concerned. The duration of them course was to be 18 cred.

Joshi (1979) surveyed 190 teachers of 18 colleges and 3 universities of Andhra Pradesh, Gujarat, Kerala, Madhya Pradesh, Rajasthan and Uttar Pradesh. He found that lecture method was used in most of the cases. The percentage of time spent on discussion periods, on an average was 19.89 and 14.57 per cent for degree and post-graduate classes respectively. Tutorials and seminars were not very popular. About seventy two per cent participants were interested. in the use of audio-visual aids. Patted and Mench (1979) analysed the programmes of professional education of college teachers of Bombay, Calicut and Madras universities of India, New York, Ohio and Texas universities of U. S. A. and Aberdeen and Glasgow universities of U. K. They surveyed 44 college principals, 85 college teachers, 12 heads and teachers of university departments and 2 administrators. The major recommendations were:
1. Need for professional preparation of college teachers.
2. Need for introduction of such courses at pre-service as well as in-service stages.
3. The common objectives of the courses were:
(a) Development of awareness about (i) aims of higher education, (ii) methods of teaching and evaluation, (iii) Psychology of learning
(b) Development of skills of effective dealing with the behaviour problems
(c) Development of teaching skills
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4. The common items of the course were:
(a) Psychology of learning,
(b) Principles and method of college teaching
(c) Evaluation techniques

(d) Psychology of creative thinking and problem solving
(e) Observation of good teaching followed by practicum
(f) Preparation of lecture plan
(g) Practice teaching

Singh (1980) conducted a study of the pre-service and in-service programmes for education of teachers of higher education in India. Some of the important findings were: (i) usefulness of the programmes for the participants, (ii) important aspects of the programmes were techniques of teaching, skills of understanding, behaviours of students, of motivating students and of evaluation, (iii) necessity for evaluation of performance of the participant of the courses, (iv) duration of pre service programme to be one academic year and of in-service programme to be one semester.

Rai (1982) conducted a study of objectives, courses and methods of teaching followed at the undergraduate level social sciences. Some of the findings were (i) lecture method was used by majority of teachers, (ii) methods or approaches favoured were tutorial, lecture-cum-assignment, problem solving, group discussion and seminar, (iii) methods or approaches not favoured were individual library work, experimental method, multimedia approach and programmed instruction, and (iv) non use of useful teaching aids such as charts, films, maps, models and cyclostyled materials.

Bhusan and Sharma (1984) suggested that the training programmes for higher education teachers should give stress on areas such as (i) re-orientation or subject knowledge, (ii) vitalising of professional studie3, (iii) problem solving processes and (iv) training on effective communication and human relation network.

Mathur (1984) pointed out that methods of teaching at higher education stage and school education stage ought to be different. He suggested the use of methods such as group discussions, group conferences, seminars and workshops.

Taneja (1984) suggested that the contents of the training programme for higher education teachers should consist of (i) nature of teaching learning: emphasising the interaction among three variables -teacher, student and learning environment, (ii) psycho-social needs of youth and adolescent underlying individual differences, motivation, and mechanism of behavioural changes, (iii) modern techniques of evaluation of teaching learning outcomes and (iv) current issues in higher education.

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Yadav and Roy (1984) conducted a survey of programmes available for education and training of college teachers in India. The programmes reported by them were (i) in-service training course in methodology of teaching (M. S. University of Baroda). (ii) Diploma in Higher Education (Bombay University), (iii) Master of College Teaching (Calicut University), (iv) Diploma in Education (Madras) and (v) Induction programme in College Teaching (All India Association of Christian Higher Education). They listed the objectives for professional orientation programmes. They also suggested activities to be undertaken in the training programmes such as (i) orientation talks, (ii) symposia on teaching behaviour and teachers' functions, (iii) workshops, (iv) seminar to post-graduate students, (v) conducting discussion with students, (vi) preparation of book reviews, (vii) preparation of instructional unit, (viii) evaluation and, (ix) sel£-instructional materials, etc.

Joshi (1986) in her paper on effective lecturing at the university level suggested certain effective factors for lecturing which were (i) audience analysis, (ii) budgeting of time, (iii) physical setting, (iv) selection and organisation of content, and (v) specialisation of objectives. According to her, the presentation of lectures could be made effective through suitable personality characteristics and cognitive skills. The personality characteristics suggested by her, were (i) modulation of voice, (ii) gestures, (iii) humour, (iv) pause, (v) speech, (vi) language, (vii) confidence, and (viii) ability to establish report. The cognitive skills

suggested by her were (i) introducing, (ii) explaining, (iii) using examples, (iv) posing questions, (v) use of aids, (vi) facilitating note-taking and (vii) achieving closure.

The National Policy on Education 1986 realised the importance of training of teachers and made following observations:

> "A major effort will be directed towards the transformation of teachin~ methods. Audiovisual aids and electronic equipments will be introduced, development of science and technology curricula and material research and teacher orientation will receive attention. This will require participation of teachers at the beginning of the service as well as continuing education thereafter.
>
> (Ministry of Human Resource Development 1986, p. 15)

The Programme of Action document made the following observations:

> "The present system does not accord teachers a proper economic and social status opportunities for professional and career development, initiative for innovation and creative work, proper orientation in concept, techniques and value system to fulfill their roles and responsibilities. Motivation of teachers is important for the implementation of the policy."

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In order to achieve this, it is proposed:

(a) To organise specially designed orientation programmes in teaching methodologies, pedagogy, educational psychology, etc. for all new entrants at the level of lecturers:

(b) To organise refresher courses for serving teachers to cover every teacher at least once in 5 years.

(c) To organise orientation programmes by using the internal resources of universities and by bringing a number of colleges together

(d) To encourage teachers to participate in seminars, symposia, etc. (Ministry of Human Resource Development 1986 p. 43)

Bourai (1987) conducted a study of 4 week experimental programme for lecturers. He found that (i) The participants were more interested in verbal communication skill rather than exposition of the content, (ii) junior lecturers had some initial problems and (iii) teaching facilities and audio visual aids were essential for improvement of the quality of teaching.

Chelam (1987) discussed various issues concerning academic staff orientation scheme. He suggested that the academic staff training colleges should function as units of the National Institute of Educational Planning and. Administration, New Delhi. He further suggested that the staff orientation programmes should be administered in three phases so that the participant could try out the skills in his own institution and report to the training institution his experience. George (1987) suggested a model for administration. of academic staff orientation programmes. Joshi (1987) pointed out the need for acceptance of the form of successful participation in academic orientation course as the criterion for confirmation of the newly appointed lecturers. Singh (1987) pointed out the importance of having desira:ble teacher trainers for successful administration of academic staff orientation programmes.

Passi and Sahoo (1988) conducted a study on a programme conducted by the Academic staff College of Devi Ahilya University, Indore. The programme had 60 participants covering 22 subjects. There were 32 resource persons. The participants favoured short presentation followed by discussion, small group discussions and use of modern gadgets. They reported that the cyclostyled materials and handouts were not utilised by most of the participants. The researchers' suggestion limiting the maximum number of participants in a programme to 30. They remarked that cultural programmes and two get-togethers helped in sustaining the interest of the participants in the programme.

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The original UGC scheme has been revised. Instead of allotting all subjects of a region to a particular Academic Staff Col1ege, various subjects and regions have been distributed. For instance, the Academic

Staff College of Utkal University is expected to run programmes for teachers of Psychology of eastern region and all teachers of Oriya. The teachers of Education are to be covered by Kurukshetra university and Bombay university.

Observation of classroom activities of college teachers:

The researcher conducted a study of classroom activities of 20 teachers of a college. The classes of these teachers were observed. An observation' schedule was developed and utilised for the purpose. In no case, this study is the sample of the total population of teachers of the college. The researcher, at the time of observation occupied seat at the last bench. The experience of the teachers whose classes were observed varied from 1 to 18 years. The study was conducted with the objective to find out the specific skills on which the teachers need orientation training if any.

TABLE- I

Number of lessons in which the skill was observed

Sl. No.	Skills	Lessons in which the skill was observed	
1	Using Blackboard	**Number**	**%**
	(a) Cleaning of blackboard before starting teaching	6	30
	(b) Using blackboard during teaching	8	40
	© Mentioning teaching points on the blackboard	0	0
	(d) Mentioning topics on the blackboard	8	40
	(e) Cleaning of blackboard, before leaving the class room	4	20
2	Using aids other than blackboard	0	0
3	Introducing lesson before presentation	6	30
4	**PAGE 18** Questioning techniques		
	(a) Giving opportunity to students to put questions.	0	0
	(b) Giving opportunity to students to answer questions of their peers.	0	0
	(c) Putting questions to students	4	20
	(d) Putting of questions to teachers by students on own initiative	4	20
5	Using reinforcement techniques.	0	0
6	Modu1ation of voice of the teacher:		
	(a) Audibility of voice to the last bench	18	90
	(b) Variation in pitch of voice to focus teaching points etc.	15	75
7	Using humour during teaching	4	20
8	Dictating notes to students	1	5
9	Giving home assignments for students	1	5
10	Body movement of the teacher during teaching:		
	(a) Movement of head	19	95
	(b) Movement of hands	14	70
	(c) Movement of eyes	14	70
11	Closure techniques:		
	(a) Giving closure statement/explanation	6	30
	(b) Leaving class before scheduled time	5	25
	(c) Leaving class after scheduled time	6	30
	(d) Leaving class just in time	9	45
12	**PAGE 19** Maintaining discipline in the class room:		
	(a) Remaining unconcerned about sleeping of students during teaching	2	10
	(b) Remaining unconcerned about coming in and going out of students during teaching	2	10
	(c) Remaining unconcerned about noise in the class room	4	20
	(d) Maintaining discipline during teaching	12	60

Study of opinions of college teachers:

A questionnaire was served to 20 college teachers to study their awareness of skills of teaching, their need for getting training and their opinions on certain classroom. practices. The responses are given below:

TABLE II

Sl. No.	Skill	Awareness		Need for Training	
		No.	%	No.	%
1	Effective use of blackboard	10	50	18	90
2	Use of teaching aids other than blackboard	2	10	17	85
3	Formulation of instructional objectives	4	20	16	80
4	Organisation of content	14	70	14	70
5	Pacing of lessons	14	70	14	70
6	Creating set for introduction of lessons	10	50	12	60
7	Introduction of lessons	10	50	12	60
8	Structuring of questions	6	30	18	90
9	Delivery and distribution of questions	10	50	12	60
10	Types of questions	6	30	18	90
11	Response management	10	50	12	60
12	**PAGE 20** Explaining	14	60	8	40
13	Stimulus variation	14	70	13	65
14	Reinforcement	14	70	11	55
15	Prompting student participation	14	70	11	55
16	Achieving closure	16	80	12	60
17	Illustrating with examples	17	85	12	60
18	Evaluating performance of students	15	75	10	50
19	Diagnosing learning difficulties	15	75	11	55
20	Management of class	18	90	6	30
21	Methods of teaching				
	a) Lecture	20	100	0	0
	(b) Lecture cum discussion	20	100	5	20
	(c) Tutorial	20	100	5	20
	(d) Team teaching	8	40	18	90
	(e) Seminar	14	70	6	30
	(f) Problem solving approaches	12	60	12	60
	(g) Projects	3	15	18	90
	(h) Assignment	12	60	10	50
	(i) Role play	3	15	18	90
	(j) Syndicate	0	0	18	90
	(k) Sensitivity session	0	0	18	90
	(1) Brain storming	0	0	18	90
	(m) Fish bowl	0	0	18	90
22	Utilisation of self-learning strategies:				
	(a)Programmed learning materials	1	5	18	90
	(b) Modules	1	5	18	90
	(c) Worksheets	1	5	18	90
	(d) Self learning kits	1	5	18	90
		1	5	18	90

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TABLE III

Sl. No.	Classroom Practices	YES		NO	
		Number	%	Number	%
1	Blackboard Work				
	(a) Ensuring clean blackboard before starting teaching activity	16	80	4	20
	If No, reasons are				
	(i) lack of time	4	20		
	(b) Ensuring c1ean blackboard before leaving c1assroom after finishing teaching	10	50	10	50
	If No, reasons are				
	(i) lack of time	10	50		
	(ii) Unnecessary	3	15		
	© Using blackboard in every lesson	16	80	4	20
	If No, reasons are				
	(i) lack of time	2	10		
	(ii) Unnecessary	2	10		
2	Question answer activity				
	(a) Putting questions to students during teaching	10	50	10	50
	If No, reasons are				
	(i) lack of time	8	40		
	(ii) Unnecessary	4	20		
	(b) Putting questions to students at the end.	4	20	16	80
	If No, reasons are				
	(i) lack of time	12	60		
	(ii) Unnecessary	4	20		
	(c) Opportunity given by the teacher to students to put questions during teaching	6	30	14	70
	If No, reasons are				
	(i) lack of time	13	65		
	(ii) Unnecessary	1	5		
	(iii) Large class	4	20		
	(d) Questions put by students on their own initiative	3	15	17	85
3	Use of humour	10	50	10	50
4	Sometimes teaching is finished				
	(a) before the scheduled time	10	50	10	50
	(b) after the scheduled time	4	20	16	80
5	Students are allowed to enter into or go out of the classroom freely during the teaching	2	10	18	90
6	PAGE 30 Sometimes students are found sleeping in the classroom	2	10	18	90
	(a) If Yes, he/she is not disturbed for avoiding				
	(i) loss of time	2	10		
	(ii) disturbance	1	5		
	(b) they are reprimanded				
7	Sometimes students are found talking in the classroom	4	20	16	80
	If YES				
	(a) they are not reprimanded for avoiding				
	(i) loss of time	2	10		
	(ii) disturbance	1	5		
	(b) they are reprimanded	2	10		

8	Notes are dictated to the students	8	40	12	60
	If TES, the reasons are such practice				
	(a) helps quick coverage of the course	8	40		
	(b) presents better communication	8	40		
	(c) saves the teacher from memorisation	2	10		
	(d)Saves students from the problem of procuring textbooks and reference books	4	20		
	(e) dictation of notes can be facilitated if				
	(i) college provides facilities for cyclostyling of notes for distribution to students	4	20		
	(ii) notes are corrected by the teacher	1	5		
9	(a) Observation of classroom teaching of colleagues is very much helpful	20	100		
	(b) Others are invited to observe the teaching and provide feedback	20	100		
	(c) Video recording facility should be made available for the purpose.	10	50		

The study indicates that there is a need for pedagogical training of the teachers. It may be interesting to note that a senior teacher of 18 years' experience was found remaining standing in the classroom for the whole period in attention position, without any movement of head, hands and eyes while explaining the topic from the textbook. The findings point out the necessity of training for all teachers, irrespective of the number of years of experience.

Suggestions for improvement of academic staff training programmes:

Following suggestions are given for improvement of the quality of the academic staff training programmes: .

(a) Observation of teaching of participants:

There should be provision for demonstration lessons by expert teachers followed by discussions. The participant teachers should deliver lessons which are also to be followed by discussion. If possible, the training institution should employ video and audio techniques for the purpose.

(b) Training in audio-visual skills:

There should be provision for training in audio-visual skills such as techniques of using blackboard, techniques of handling various types of projectors and other audio-visual equipment, etc. and preparation of various audio-visual instructional materials:

(c) Training through protocol materials:

A number of protocol materials are available for training. These should be utilised for improvement of the quality of the training programmes.

(d) Subject wise training:

Each subject requires certain specific skills. Hence teachers of a particular , subject should be grouped together for training.

(e) Training according to level of classes taught :

While selecting participants from teachers of a particular subject, it may be better to have groups of teachers according to the levels of classes taught. For instance, the nature of post-graduate class teaching taught to be different from the nature of undergraduate class teaching.

(f) Training for all teachers:

There is necessity of such training for all teachers may be given preference.

g) Training with the help of CCTV:

Closed circuit television can improve the quality of training programmes. Every academic staff college should be equipped with a CCTV studio.

(h) Need for diversity in programmes: There is a need for diversity in programmes.

As revealed from the tables given above, the college teachers are not uniform in. their perception of need for training. Hence, participants need to be grouped for training purposes.

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A STUDY OF MOTIVATIONAL STATUS IN HIGH SCHOOLS IN SHILLONG

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Introduction

The will to work is an important requirement for any educational improvement programme. Needs, desires and aspirations of educational personnel are significant elements which help in building an appropriate climate for the will to work. Every individual has needs, desires and aspirations, which are termed as motives. Motivation is that desire or • feeling within an individual which urges him to action. A number of research investigations : have been conducted which lead to many theories in the sphere of motivation.

In any educational organisation, groups of persons work together for a desired goal through a network of relationships among individuals and activities. In the case ofschool organisation, one of the most important roles of the Principal/Head of the school is to influence individual behaviour and action towards achievement of identified/determined set of school' objectives. Principals of schools act as motivating agents in order to influence the behaviour of teachers, students and office staff. For proper functioning and promotion of schools, all the teachers, students and office staff need to be motivated by different means.

Teachers and students must be satisfied either through word of mouth or incentive or through other measures. The needs of the teachers must be satisfied with greater effort so that their will to work and participation increases the productive output of the school. Next come the students, whose interest, attention, attitude, needs must be influenced in such a way, as to achieve greater interest to promote the school's prestige, status and power.

Thus, in the process of motivation, the Principal of a school has to deal with different personnel which include children and adults. To deal with individuals of such differing age level is a very complex and challenging job. The Principal of the school must understand the feelings of a young child and also on the other hand those of matured adults. It's not an easy task to satisfy every individual with due care and attention. Hence, we; find that the Principal as a motivator, has to have the capacity and patience to understand the feelings of others and also to mould their feelings in right path so as to function and promote school activities effectively and efficiently.

In order to investigate how the Principals of High Schools motivate teachers and students, a study was undertaken by this investigator in Shillong city, the capital of Meghalaya.

Objectives of the Study

This study was conducted to fulfil the following objectives:

To investigate the extent of teamwork that exists in the schools (in terms of Principal's responses to Q. No, 1).
To investigate whether due recognition is given to a teacher's performance, by the Principals of the schools concerned.
To investigate the means of assessing the professional growth of teachers in terms of the classroom performance.
To investigate the methods adopted for promoting students' interest in studies.

Method

The sample of the study consisted of 50 High Schools of Shillong city. The sample was selected so that it represented different categories of schools—Boys, Girls and Co-educational.

A questionnaire consisting of 5 items was constructed by the investigator to collect information related to the aforesaid objectives from High Schools in Shillong. The questionnaires were distributed to the Principals of Schools only.

List of Questions

Following were-the questions —
How much co-operative team work according to you is there in your schools ?
Do you give due recognition to the teachers for their performance ?
Do you have any tools, rating scales, etc. to assess the motivation, competencies and professional growth of teachers ?
Does your school have any Teacher Counsellor ?
For growing students' interest in subjects of study, what does the school provide ?

Description of Sample

The questionnaire was administered to the selected school Principal. Table 1 indicates the number and types of schools selected.

TABLE I
Types and Number of Schools and the Number of Respondents

Sl. No.	Type of School	No. of Schools	No, of Respondents
	Boys' School	8	8
	Girls' School	10	10
	Co-educational School	32	32

Table II given below provides data regarding the total number of students, teachers and office staff of High Schools of different types in the year 1988 functioning in Shillong,

TABLE II
Strength of Teachers, Students and Staff in the High Schools of Shillong

Sl. No.	Type of High Schools	Total No. of Teachers	Total No. of Students	Total No. of Office Staff
1.	Girls			
2.	Boys	951	21120	101
3.	Co-educational			

Data and its interpretation

Table III presents responses regarding the amount of co-operative team work which exists according to the Principals of Schools.

TABLE III
Responses Regarding Teamwork in Schools

SI. No.	Nature of co-operative team work	No. of Respondents
1.	Very little	4
2.	Moderate amount	17
3.	Great deal	**29**

Another item in the questionnaire sought to know that whether the schools do have any Teacher Counsellors. It was found that 18 (36 %) of the schools subjected to the study have Teacher Counsellors and 30 (60 %) did not have such personnel. There was no response from 2 respondents in this regard.

It was found that 40 (80 %) of the Principals of Schools did give due recognition to the teachers for their performance. 10 Principals (20 %) responded saying that this was not possible.

With respect to the provision of tools, rating scales, etc. to assess the motivation, competencies and professional growth of teachers, it was found that 13 (26%) of schools had such facilities-but the majority i. e., 35 (70%) of schools had no such facilities. There was no response from the remaining 2 Principals of Schools.

Table IV shows the method adopted by school Principals for motivating the Students* interest in their study subjects. No response was available from one respondent only.

TABLE IV
Method Adopted for Motivating Students in the Schools

SI. No.	Nature of motivating students	No. of Respondents
1.	Award of marks only	4
2.	Awarding marks and prizes	39
3.	Other incentives like praising or reinforcing verbally	6

Conclusion

From this study it may be observed that there is a great shortage tools or tests in order to assess the performance of teachers in the schools of this capital city. If, this be/is the case in the capital city, what would be, the case of other urban, semi-urban or rural schools of the State? In order to have productive output from the schools there is a need of publishing psychological tests which should be made available to all the schools of the country easily.

In order to motivate all the students in the subjects of study, only marks and prizes would not serve the purpose. Educationists, researchers, Principals, teachers and others must think of some other means which would have a greater effect and influence on students according to their individual tastes.

In conclusion, it may be said that if teachers and students are not motivated in an adequate manner, education in the schools would be less meaningful and fruitful in terms of qualitative productive output.

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REORGANISATION OF SECONDARY TEACHER EDUCATION CURRICULUM IN THE CONTEXT OF NPE 1986

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1. Introduction

If we peep into the history of teacher education, it will be seen that whenever efforts were made to evaluate the teacher preparation programmes the results were not satisfactory. The major weaknesses of existing system of teacher education have been repeatedly pointed out by the University Education Commission, (1948-49), the Secondary Education Commission (1952-53), and the Education Commission (1964-66). It was observed that the existing system appears to be static and rigid to cope up with the national goals. It provides student-teachers very little awareness of the role that education can play in transforming the present Indian society into a truly democratic, socialist and secular society that we wish to build up in the country. Education Commission (1964-66) remarked, Vitality and realism are lacking in our curriculum and programmes of work continue to be largely traditional/ The Commission further recommended a sound programme of professional education of teachers for qualitative, improvement of education. All these acts suggest a drastic change in the entire existing system of teacher education. Considering all these weaknesses of existing programme, NCTE (1978) had prepared a framework for teacher education curriculum. It provided to the nation a set of guidelines for reorganisation of teacher education curriculum in the context of ,10+2+3 pattern of education. These guidelines called for drastic change in the traditional approach to teacher education starting from the very conception of teacher education to its objectives, structure, content and methodology. Of course, this curriculum has also not been implemented to the fullest extent by all the colleges of teacher education. Sharma (1982) examined critically the existing foundational courses prescribed by Indian universities for B. Ed. degree with a view to finding out their main defects and outstanding features. It was revealed that current foundational courses are with great diversity in respect of aims, titles, combination, content classification and practical work. It was also observed that the courses have little relevance to the needs of secondary schools. A workshop on revising B. Ed. Syllabus (1983) by NCERT concluded that there is no uniformity in B Ed. curriculum. Even weightage, given by various universities to different courses, differs. National Commission on Teachers—I (1983-85) recommended for reforms in teacher education^ It further said that the existing one year B. Ed, course be made effective both by lengthening the time available and by revamping the current courses and ' curricula. These observations suggest the need for reorganisation of teacher education curriculum in the country.

2. NPE 1986 and Teacher Education Curriculum :

Challenge of Education : A Policy Perspective (1985) observed that teacher performance is most crucial input in the field of education. It further pointed out that process of updating the curricula of teacher education has been very slow. Much of teacher education is irrelevant even to contemporary requirements, Teacher training too is not planned and organised to develop spirit of inquiry, initiative, scientific temper, manual dexterity, conceptual clarity and linguistic skills for effective speaking and writing which teachers are expected to impart to their students. The training programme also does not provide for developing receptivity to induction of modern educational aids nor does it impact skills to operate even audio-visual aids.

NPE (1986) is a framework of educational reconstruction in the country. There are certain aspects of NPE which has direct bearing on teacher performance. Some of these parameters are : (i) establishment of national system of education with national core curriculum; (ii) inculcation of certain values in entire system of education; (iii) substantial changes in the content and process of education including improvement in teaching methods. In the context of these parameters, NPE gives paramount importance to teachers' status and their training. Indeed, the quality of training has predominant role in teachers' performance. NPE goes on to say that keeping in view the pivotal importance of teachers' education, priority attention will be given to a complete reorganisation of system of teacher education. Of course, NPE does not suggest any specific and detailed programme of reorganisation of teacher education. POA for implementation of NPE emphasises need for upgradation of quality of teacher education. But it is certain that reorganisation of content and methods of secondary teacher education is necessary to enable it to play effective role and discharge the functions envisaged in NPE.

3. Relevance with School Curriculum :

In the changing pattern of Indian society, with the advancement of science and technology, education holds a priority in moulding the future of the student population. The educative process and content have to be continuously oriented, to suit changing situations. It is foremost function of education to prepare students for many aims like : (i) to acquaint them with cultural heritage; (ii) to prepare them ***to*** adjust to changing situation; (iii) to create consciousness of the environment, (iv) to develop scientific temperament, etc. This being the case, the content have to be reviewed from time to time. Even at present, thoughtful people in all walks of life are greatly disturbed by a progressive erosion of values and resultant pollution of public life. It is, therefore, being urged that content of education should be reoriented. It is expected that a coherent value system would be inculcated through educational process based upon rationality and a scientific approach to life. Also, at present, the sense ot national integration has recently been under considerable strain because of divisive forces arising from caste, religion and regional consideration. Therefore, there is a widespread demand that effective measures must be taken to educate people about the freedom struggle. NPE observed that growing concern over the erosion of essential values and increasing cynicism in society has brought to focus the need for readjustment in the curriculum in order to make education a forceful tool for the cultivation of social and moral values. (NPE 8. 4.). Also, there is a paramount need to create a consciousness of the environment. This aspect will be integrated in the entire educational process (NPE 8. 15.)

The outstanding feature of NPE in the view of above mentioned aspects is the articulation of a national system of education based on common educational structure and a national curricular framework. FPE emphasises on common core elements in National Curricular framework. These core elements are as follows :

(i) History of India's freedom movement.
(ii) Constitutional obligations
(iii) Content essential to nurture National identity.
(iv) India's common cultural heritage.
(v) Egalitarianism, Democracy and Secularism.
(vi) Equality of sexes.
(vii) Protection of the environment.
(viii) Removal of social barriers.
(ix) Observance of small family norm. • >

(x) Inculcation of the scientific temper.

NCERT has been given the responsibility of bringing model syllabi and exempt instructional packages in the above mentioned ten core elements.

Teacher education loses its social and educational significance if it does not keep in step with the development in school curriculum in its theory and practice. Correspondence between the school curriculum and teacher education curriculum has to be brought about, which has been so far neglected. In order to be a catalyst in the process of developing a citizen who is productive, believes in social justice and integration, possesses values benefiting to democratic, socialist and secular society, the teacher himself needs to become such a citizen through appropriate learning experiences. So this is a challenge for colleges of teacher education. For implementation of National Curriculum, secondary teacher education institutions are required to follow a new curriculum which emphasised thrusts envisaged in the policy. Some of these thrust areas having a direct bearing on teacher education are, Education for all; Education for equality; Core elements of National Curriculum, Learner centered education, Value education etc. The curriculum for teacher education needs to be revised in the light of these thrust areas. There should be an emphasis on integration of education and culture, work experience, physical education and sports, the study of Indian culture and problems of unity and integration of India. Moreover, educational technology will influence not only teaching-learning process but also the content and theit design. These aspects need to be considered while framing curriculum for teacher edcation,

4. Teacher Education Curriculum : Design

There are number of ways in which teacher education can respond to thrust areas mentioned above. Firstly, teacher education colleges should consider the objective namely, development and 'nurturing of a common Indian identity in teacher education curriculum. They should design activities appropriate to the levels of learners. Secondly, cognitive, psychomotor and effective experiences relating to basic knowledge and under-standing of ten core elements could be provided in terms of foundational courses. Thirdly, appropriate ways and means for organising learning experiences for school pupils in different core elements should form an integral part of the methodology training. Fourthly, use of educational technology should be emphasised for training in various aspects. Lastly, NPE has considered inculcation of values as a major dimension of educational reform. This requires to be reflected in teacher ^education curriculum. Simply adding a subject or more will not help in developing values but 'variety of co-curricular experiences are needed for this.

As pre-service ^teacher education is essentially a professional preparation programme, it should have adequately strong dimension of theoretical studies and guided practice. These two have to be optimally integrated for meaningful pursuits. The whole programme could be divided into five major components as follows :

(1) Foundational Courses

Child, School and Society are at the core of the syllabi. Foundational courses emphasising mainly "psychological, philosophical and social bases of education keeping in mind, the interrelationship of child, school and society should be given prime importance. This may consist one course on philosophical, social perspectives and current issues and problems with reference to ten core elements. This can be renamed as 'Education in emerging India'. Second course based on Psychology may focus the development and nature of learner, principles and process of learning, psychology of adjustment etc.

(2) Specialization Course

This course may highlight aims and objectives of secondary education teaching as a profession, curriculum planning instructional strategies, techniques of evaluation,, school organisation, co-curricular activities etc.

(3) Content Cum Methodology

This course must deal with different approaches, strategies, methods, techniques, etc. not so much in a general way, but it must be in relation to content of secondary schools. This must be further extended to apply general principles of curriculum planning, teaching, learning and evaluation.

(4) Additional Specialization

Additional specialization in certain areas like, Environmental Education, Value Education, Health and Population Education can be introduced under this head. This will help for developing awareness and also for sensitization of the need for certain areas of national importance through general courses.

(5) Practical Work .and Field Work

This work would include practice teaching and other 'related work like lesson planning, unit planning, preparation of instructional material including audio visual aids, construction of evaluation tool, working with community, participation in co-curricular activities, some special practical work related to ten core elements. This course will be helpful in order to reinforce theoretical aspects of learning. It will also provide students with the actual life experiences so that they may verify and validate their theoretical knowledge.

Now it is the task of colleges of teacher education to make necessary reorganisation keeping in view the above components. Of course, there are certain issues which require thorough thinking for implementation of this design. Some of these issues are as follows:

(i) Is the duration of one-year training sufficient for suggested change ?
(ii) Will all colleges of teacher education follow the uniform curriculum?
(iii) Will professional attitude of entrants in the course be checked in any way ?
(iv) Will there be orientation for teacher educators in this context ?

If teacher education curriculum will be reorganised keeping in view the above mentioned five components and by resolving the issues mentioned above, we hope that expectations of NPE can be achieved without much difficulties.

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SOME RESEARCH ISSUES IN TEACHER EDUCATION IN INDIA

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The standard of education in India, as in any other country depends, above all other things, on the quality and competence of teachers. Whatever means #are adopted for improving education nothing can be achieved if the teachers engaged and employed in the system do not possess the necessary intellectual and professional quality and ability. Therefore, the teacher is the most significant factor in the learning environment provided by the institution.

Teacher-Education: Concept and Contours

Teacher-Education is a complex activity. James B. Conant and other specialists have written about the complexity found in the area of teacher-education and the changing concept of teacher and the process of teaching.

In any educational process there are three elements: (i) those who instruct, (ii) those who are.instructed, and (iii) the programme followed. In each of these cases, wide diversity is found throughout any system of education. Education is course-ridden and it is time to challenge the assumption that education takes place only when the student is physically present in the class-room. However, it is widely recognised that the breadth and depth of academic achievement of future schoolteacher could arid should be greater than what it is at present. There is need for giving freedom to teachers to experiment with different ways of teaching. The status of profession should be analogous to that of the clinical profession.

The term Teacher-Education has often been used in two senses, viz. (i) all the formal and informal activities and experiences that help to qualify a person to assume the responsibilities of a member of the educational profession or to discharge his responsibilities more effectively, and (ii) the programme of activities and experiences developed by an institution responsible for the preparation *and* growth of persons preparing themselves for educational work or engaging in the work of educational profession.

Thus the concept of teacher-education is broad enough to prompt and to enable teachers to promote individual development and to inspire the students to a value system which may sustain a modern, democratic and progressive society. It is increasingly being felt that teacher preparation programme must include those things which would enable prospective teachers to help children and youth assume the responsibilities of democratic citizenship, such as, ability to exercise their franchise intelligently and to participate in democratic decision making.

Some Researches on Teacher-Education

Education is one of the most complex, extensive and problematic field - which requires fundamental as well a& applied research work. Within the general framework of educational research, research in the area of teacher-education deserve the utmost attention of policy planners because no reform can be implemented in the field of education unless the teachers are equipped and oriented with the knowledge, skills and competencies and attitudes required to implement the innovative changes. Thus the teacher forms the focus of all educational processes and the programmes.

Some investigators and researchers have made efforts to study the teachers[1] teaching and teacher behaviour, and teacher-education in India. It seems worthwhile to describe and discuss some of these research studies.

Dasgupta (1965) studied the .emotional 'difficulties of teachers in secondary schools He found that children's annoying behaviour caused greatest concern to women teachers. It was noted that the lack of experience also caused difficulties. Lack of discipline in the school, absence of motivation of the teachers towards teaching profession,, financial difficulties of the teachers, and insecurity of job in privately managed schools were found as important causes of frustration among school teachers.

Chatter]i (1966) attempted to find out the crucial differences between primary and secondary school teachers on one hand and non-teacher employees of similar job status on the other. He concluded that teachers both at primary and secondary levels .were found to possess different models of identification from those possessed by the non-teachers.

Mallaiya (1968) studied the modern trends in teacher training programmes, the problems of teacher training and the ways and means to make them effective. She found-that the preprimary teacher training facilities were insufficient, the Montessori training was very costly, and both of them needed reorganisation. She observed that there was no proper dissemination of research findings and in general, teacher training was in bad shape.

Tiwari (1968) made an enquiry into .the cultural background and the necessity of cultural training of pupil-teachers. He found a positive correlation between the cultural background of the prospective teachers and their educational achievement. .

Chaturvedi (1970) tried to find out the personality differences among students and teachers. He found that the teachers and the students'showed definite ^trends of deviance, and had differential traits of personality.

Saikia (1971) studied the problems of teacher-education (at the secondary level), identified the causes of the ineffectiveness of teacher training programme, and recommended some remedial measures. He found that non of the trained teachers prepared lesson plans for their day to day teaching and observed that the training course itself and the conditions under which a trained teacher had to work in a school are more responsible for this discrepancy.

Kaul (1972) made a factorial study of certain personality variables of popular teachers in secondary schools. He found that the popular teachers distinguished themselves as were outgoing, intelligent, emotionally stable, sober and conscientious, venturesome, tough-minded, shrewd, placid, controlled and relaxed. The popular teachers were significantly high on theoretical, social, political and religious values and were significantly low on economic and aesthetic values. Such teachers had favourable attitude towards teaching in schools and were effective in their work as teachers.

Khatry (1973) attempted to find out the .relationship between measures of self-concept and professional adjustment of three categories of teachers—primary, secondary and college. He concluded that there were no significant differences among the self-concept of primary, secondary and college-teachers, but there was a significant relationship between self-concept scores and professional adjustment scores of the three types of teachers.

Ahluwalia (1974) developed a Teacher Attitude Inventory (TAI) and measured the change in the professional attitudes of student-teachers as a result of the teacher education course of one academic year duration. The mean attitude scores, as a general rule, were found to decrease in place of improving at the end of the training programme. The mean attitude scores changed either in positive or in negative as a conseqiience of the nature of training programme provided by the different institutions. The sexwise and institution wise mean attitude score differences were found to be non-significant. The sex was not found to be either a determinant or a differential of change in professional attitudes of student-teachers as a consequence of teacher-preparation programme.

Chhaya (1974) compared the effective and ineffective teachers with respect to personality adjustment, teaching attitude and emotional stability. She concluded that effective teachers had significantly better personality adjustment, favourable attitude towards teaching, were emotionally stable, authoritarian and extrovert. She further found that sex and age of a teacher were significantly related to his/her effectiveness.

Goyal (1974) studied some of the personality correlates*of Creativity in secondary school teachers under training. He found that the personality differences --between high and low creative student-teachers were very slight. Intelligence was the most consistent: personality correlate of creativity. Highly flexible student-teachers were more guilt prone and less imaginative. High creative females fhad more self-conflict, were moralistic, were socially precise and bold.

Singh (1974) studied the relationship between teacher values, attitudes and job-satisfaction. She concluded that there was significant positive relationship between scores on theoretical and social values and scores on attitudes. Contrary to this, there was a negative relationship between scores on economic and political values and scores on attitudes. The relationship between scores on values and scores on job-satisfaction was more pronounced. Teachers scoring high on economic and political values were not satisfied with their profession and-there was a positive and significant relationship between scores on attitudes and scores on job-satisfaction.

Bhagia (1975) assessed the nature of innovations made in schools and training colleges and found out whether the problem of diffusion and implementation was associated with the institutional variables. He .observed that the teachers were not having a clear picture of their role-performance and the objectives of the various innovations. Teachers needed help from different persons in acquiring the techniques and behavioural skills required to confirm to the expected specifications.

Gupta (1975) applied the Cattel's 16 P F test to predict the teacher-effectiveness. He found that highly effective teachers were more effecto-thymic (A E), more intelligent (B E) had more ego-strength (C +)/were more surgent (F +) had more self-sentiment (Q_3 +), were less suspicious to (L-), were less guilt prone (0—0 in comparison to general adult population. The low effective teachers were less intelligent (B—) and had lower self-control (Q 5—) as compared to the general population.

Gupta (1977) studied the personality characteristics, adjustment level, academic achievement and professional attitudes of successful teachers. He found that teaching success was significantly related to a variety of personality factors. Further on, successful and less successful teachers were different in personality characteristics, adjustment and attitude towards teaching.

Singh (1978) carried out a study on leadership behaviour of the heads of secondary schools. He found that the total leadership behaviour was significantly related to the four personality factors i. e. outgoingness, intelligence, emotional stability and assertiveness.

Bhatnagar (1979) attempted to evaluate the organizational climates of various types of teacher training institutions. He found that the organizational climate of teacher- training institutions was characterized by high level of hindrance, .authoritarianism, and high academic emphasis. In large institutions, the climate was dominated by high authoritarianism, high thrust, high academic emphasis and higher degree of discipline and control as compared to small institutions. '

Kushwaha (1979) studied the attitudes of secondary school teachers towards children and schoolwork and their role-perceptions. He found that teachers' attitudes were inversely related ?to the different .role-perceptions. There was no significant difference among the high, medium and low attitude groups on some role-perceptions.

Mangal(1979) identified the fundamental dimensions of teacher adjustment, and developed a teacher-adjustment inventory.

Aggarwal (1980) attempted to identify the motivational factors in B.Ed, trainees' choice of teaching as a profession. He found that factors such as desire to continue education, possibility of doing good to the country, interest in teaching, security of job and fulfilment of parent's wish were important in choice of teaching as a profession.

Mann (1980) tried to find out the concept .of success in teaching of different groups and compared the personality traits of successful teachers with those of unsuccessful teachers. He found that the personality of successful and unsuccessful teachers differed with respect to some selected factors. The successful teachers were significantly more expressive, ready to cooperate, attentive to pupils, generous in personal relations, bright and alert, fast in learning, efficient in abstract thinking, emotional in nature, realistic about *life, effective[1] in adjustment, dependable and conscientious than unsuccessful teachers.

Mohan·(1980) studied the effectiveness of the teacher training programmes in some selected Colleges of Education. He found that the teacher training departments neither had adequate buildings nor had equipment and the hostel facilities for girls and boys. Quite a few teacher-educators were not adequately qualified to supervise teaching practice in the subjects in which they were supervising the lessons.

Mutha (1980) attempted to identify the factors—attitudinal, motivational and personality—which differentiated effective teachers from ineffective ones. He found that sex, professional training, nature of schooling and income level were significantly associated with the teachers' effectiveness. The set of personality 'variables—ascendance—submission, anxiety, marital adjustment, extroversion, neuroticism, job-satisfaction and teaching attitude significantly predicted the teachers' effectiveness.

Wadhawan (I980) studied the socio-economic and cultural background of higher secondary school teachers, -the degree of their professionalization and the nature of relationship between the social background and degree of professionalism. He found that the largest number of teachers belonged to lower middle class, lived in rented houses and had only a bicycle as the mode of transport. Majority of them had urban background, had nuclear families and were of mediocre intellectual status. There was positive and significant relationship between professional and general environment of the school and the degree of teacher's job satisfaction.

Gupta (1982) studied the effectiveness of the innovative methods in better learning and higher achievement in the Colleges of education. He concluded that the methods of discussion, symposium and supervised study were more effective than the lecture method. The workshop method proved to be definitely superior in the case of the general group as well as the higher intelligence group. He inferred that all innovative methods, except the lecture-cum-discussion method, had comparative merit against the lecture method.

In recent years, there is a spurt in research activity. Beside the National Council PI Educational Research and Training (NCERT), New Delhi, a good many institutions at the State level such as State Institutes of Education (S I E), State Council of Educational Research and Training (SCERT), University Departments of Education (UDE) and some |)f the Post-Graduate Level Teachers' Colleges (CTE) now take-up research projects ^associated with the various facets of teacher-education in view of the new demands and Challenges in the field of education in general and as a consequence of the exhortations iand implementation of the provisions of the National Policy on Education 1986.

Research on Teacher Education: Some Issues

The primary aim of research in teacher-education is and should be to make teacher-education programmes more effective and useful for the schools in particular and por the community in general by producing right type of teachers equipped adequately with a sound knowledge of their subjects of specialization, professional competencies and a deep insight into human nature and the human relationships. However, there are some new areas* which have received the attention of the researchers in the field such as the objectives of teacher-education, contents and the programmes of teacher-education, teaching methodology, problems of student-teachers, selection and admission criteria, attitude formation, interest and other pursuits of student-teachers, class-room behaviour land creativity, value patterns of teachers, the effectiveness OI student-teachers, interaction analysis and the like. Unfortunately, serious thought has not been given to some important aspects of teacher-education and whatever research has already been done cannot be treated as of high quality and of much relevance. Most of the research projects were undertaken in view of the convenience of the researchers rather than to satisfy fir meet the felt need of the teacher-education institutions or teacher-educators.It will be appropriate if the •following fundamental principles for undertaking research are kept in view while making a selection of the research topics in the area of teacher-education-

(1) The research may be undertaken in response to a felt need, internal or external.

(2) The research is also expected to enrich the existing store of knowledge or add to a theoretical frame work.

(3) The rapid changes in the society bring about corresponding changes it the system of education and which in turn pose new problems and the research studies should find out the viable and effective solutions to these- new problems.

(4) The research methodology and the tools should be designed and standardized for studying typical Indian conditions and needs. The use of borrowed technology and tools from foreign researchers often create problems.
(5) The difficulty of the collection of reliable data may be solved by a process of constant and systematic observation and scientific experimentation.
(6) Applied form of research should be given priority to fundamental research which however, is also applied in nature although its application is deferred for some time.
(7) Preference and encouragement should be given to the working-teachers to undertake simple research projects of action-oriented type.

Research in Teacher Education ; Some Priority Areas

On the whole it may be stated that in the field of teacher-education, there is an urgent need for breaking the barriers between stage-wise teacher-education programmes with a view to maintaining continuity and mobility from one stage to another. The programme of teacher-education now needs more emphasis on the attitudinal changes in the prospective teachers of India who may have an implicit faith in the guiding principles of our Constitution—democracy, secularism and socialism, besides possessing adequate knowledge of the subject matter and the methodology of teaching. They must be prepared and well-equipped to impart man-making education to students-children and youth.

Evidently enough, research in the area of teacher-education in India is about four decades old. The research in teacher education has progressively increased over the last few years though still its quality is dubious. The range and variety of variables studied is obviously restricted and limited. It seems important and relevant that alternative but effective models of teacher education be theorised and evolved. These models may be tried-out, tested and probed intensively. A viable and cost-effective model be identified, accepted, and recommended for adoption and implementation.

It is desirable that in addition to the variables associated with institutional context, the variables related to the community context and classroom context in teacher education may be studied, scanned and scrutinized. Curriculum development and transaction in teacher-education is another area of potential research value. The follow-up studies of the student-teachers when they enter teaching profession after completing the teacher-preparation courses deserve special attention and immediate care of the researchers. Investigations on strategies, modalities, and practices in teacher education, specially based on stimulation training exercises and teaching model based approaches need be carried out. Applications of distance-learning : systems and flexible-learning (systems) techniques deserve to be tried out. The conduct of such studies may provide a concrete research base and a sound empirical base to the plans and programmes of teacher education. There is need to emphasise and to lay stress on programmatic research as well as participatory research in the area of teacher-education.

Conclusion

The significance of teacher education lies in the fact that a teacher tries to teach in the same way in which he himself, was taught by his teachers and thus tends to perpetuate the traditional, hackneyed, and stereotyped methods of teaching. These outdated and outmoded methods of teaching need be discarded now. A sound and innovative system of teacher-education alone can lay the foundation for the professional growth of teachers. Only first rate teacher-education institutions can produce effective teachers. They really play a crucial role in evolving a sound and effective system of teacher-preparation. For making a successful and satisfactory break through it is desired that weak and sick teacher-education institutions should be identified, abandoned and weeded-out immediately.

India is determined to embark on a programme of extending and intensifying the work of research as per the Programme of Action (November, 1986), and raise teaching and education to a level which fulfils the demands of the time. Educational research and development (R and D) become a salient feature of the educational scene of today and tomorrow. A new set of words shall gradually come into prominence : "Knowledge Production and Utilization" (K P U). It is in the fitness of things that researchers should standup to the confidence reposed them and should embark on action-oriented researches which may transform the dreams and aspirations of the people as outlined in POA of NPE, 1985 into a reality and actuality.

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PSYCHOLOGY OF ADULT LEARNERS

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The adult or mature phase of man's life is characterised by relative stability ;|$r biological factors. The period of adulthood, the longest of all the stages of life is marked by an all round maturity—physical, mental, emotional and social. In India we J describe them adults who continue to exhibit the stabilized characteristics from the stage ***et*** late adolescence. The age of 15 has been taken as the entry age for adults. The men and women beyond this age group constitute the adult population in India. This population can safely be categorized under two age levels. The one age level is from 15+ to 35 and the other age level is from 35+ and above. When, we have decided to achieve the | national objectives of education in terms of universal elementary education and eradication of adult illiteracy, we have to look to the National Policy of Education with special reference to Adult Education. Besides the problems of adult learners in the formal sector of education, the national aim is to reach by 1990 all illiterate adults in the [age group of 15-35 through the non formal channels of education. But as of 1981, the size I of the population in this age group was 235 million. And the number of illiterates among them has been estimated in the table below—

Number of illiterates (15-35 years) 1981.

Age range	Population in millions	No. of illiterates in millions	Percentage
15-20	74.8	33.6	45.00
20-25	63.2	31.9	50.50
25-35	97.0	50.2	51.80
15-35	235	115.7	49.20
35+& above	179	129.3	72.20
15+& above	414	245	59.20

(Source—An Analysis of The Situation of Children in India—UNICEF 1984).

The target set for eradicating adult illiteracy within the age group (15+ to 35> was as follows :—

1980-81	-	2.6 millions
1981-82	-	3.1
1982-83	-	4.3 „
1983-84	-	6.5
1984-85	-	9.0 „ 25.5 millions
198^-86	-	11.5
1986-87	-	14.0
1987-88	-	17.0
1988-89	-	20.5
1989-90	-	**243** 87.4 millions
Total : —		113.0 millions

The above figure indicates that out of 115.7 million of illiterate adults estimated up to 1981, only 25.5 million could have been covered through the adult education programme by 1984-85 within the age group of 15+ to 35. The cumulatively added number of adult illiterates during 1981 1985 might have imbalanced the estimation.

To understand the basic psychology of these adult learners who would come through the nonformal agencies, we have to consider them by their age groups and sex. The adult education centres cannot accommodate these adults in heterogeneous groups ignoring the age levels and sex differences.

The adults within the age group of 15 to 35 have some definite psychological behaviours. These are also the determinants of learning at this age. The psychology of male adults and female adults within this age group has to be taken into consideration in analysing the psychological characteristics in addition to the age criterion.

The adult male members within the age level 15+ to 35 exhibit the following few qualities. They have their own views in respect of these qualities and they behave in a way suitable to their self-status and position in the family and society.

The important qualities of these adults are : (1) Sense of responsibility, (2) Aspirations, (3) Interests and needs, (4) Attitudes, (5) Leadership, (6) Skills, (7) Awareness, (8) Rate of learning, (9) Social values.

Research evidences indicate that adults developed some sense of responsibility to attend to their normal duties independently and their level of aspirations are very much different than that of the other adults whose age level is 35+ to 65. They have hopes and ambitions to take up responsibilities in the world of work.

In view of this, the temptation to prescribe uniform principles for all kinds of adult learners will have to be resisted. The very idea of organising mass adult education in a uniform pattern for the whole country or for the entire state is misconceived. Adults function in groups based on professions of similar interests.

Interests and needs of the female adult learners (15+to 35) in India shall be different than that of the male adult learners of this age level. The basic psychological tendency of these female learners at this stage is to gain recognition and their interests in a group is very much limited to the house hold activities where they are termed as house wives or responsible female members of the house assigned with some jobs. Every adult is always capable of unlearning and re-learning, imbibing new values and developing new attitudes, acquiring new skills and readopting the old ones. But the urge for a change has to come from within the adult himself. If a proper psychological environment exists around him, the adult begins to feel such an urge and responds to it creatively. The adult learner develops interest in the cognitive learning where cognition begins with perception but goes beyond that. The process of cognitive development is intimately related to growth and maturation for example, it is known that growth of intelligence is rapid during infancy and childhood and begins to taper off thereafter to reach almost its asymptote by about 16 re 18 years of age.

Keeping in view the above psychological requirements the following can be concluded.

1.Adults learn best in adult ways.
2. Adults have much accumulated experience, skills, knowledge, opinions a' prejudices.
3. Their rate of learning is higher than the children, so far as formal cognitive process is concerned.
4. Memorising and mechanical information is unsuitable to the adult learner because he feels isolated from the group.
5. Since adults are resistant to change, new learning and new attitudes may be uncomfortable for them.

According to the principles of phenomenology, we have to understand the learners' behaviour from his .view point and not from an external view point. Every individual adult has some aspirations in his life. If his aspirations are taken care of through this non-formal 'channel perhaps the adult learner shall co-operate in the massive programme of adult education. He must be given a chance to play his role in the circumstances of the environment, so that the world of work of the individual is brought closer to the centre of ⁚Adult Education. 'The education programme should therefore be flexible regarding duration, time, location, and instructional arrangements. It should be diversified in regard to curriculum, teaching and learning materials and methods.

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CURRICULUM DEVELOPMENT

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1 . Introduction

Curriculum is often referred to by people as a PLAN for 'educating people or as FIELD of STUDY (Zais. 1976). The decision about what should be taught in an institution and academic department, a classroom, or other instructional situations is in fact a decision about the curriculum aims or goals. Individuals also differ in their desire to determine what should really be taught in a course of study. However, having curriculum goals chosen by the largest number of: people involved in an educational enterprise is still the best general principle.

CURRICULA are usually made up of these particular aspects of life, knowledge, attitudes, and values selected from the total culture of a society for transmission to future generations within the structure of educational systems (Lawton, 1975). Curriculum Planning refers to the ways in which educators make the above selections and put them into practice. When the intent is to identify the collective components of the substantive entity, that is a plan for instruction, it is being considered as curriculum design. Curriculum Development can be defined as the process, the syntactical structure, the interpersonal dynamics of decision-making about instructional planning, leading to curriculum design, the product, the end-result of the decision-making processes. Curriculum development does not necessarily precede curriculum design or construction in a linear order, but instead, these two overlaps and occur conjunctively.

The nature of Curriculum Development (C. D.) Levels of decision-making, Elements in C. D. and Models for determining what to teach are discussed in the following sections.

2. Nature of Curriculum Development

In the curriculum development process, the essential ELEMENTS involved =:e issues of power, people, procedures and participation. The related critical questions are:

—Who makes decisions about curricular issues ?
—What choices or decisions are to be made ?
—How are these decisions made and implemented ?

Invariably these concerns lead to curriculum development being characterized as n interactional process that is political, social, collaborative and incremental in nature. Thus CD is

—An interpersonal process or system of operations for making decisions about where curriculum planning will take place (eg: political zone of influence according to legal stature), who will be involved in the planning, the selection and execution of working procedures, and how curriculum documents will be implemented, appraised and revised (Beauchamp & Beauchamp, 1972). It is a dynamic, vital complex network of interactions among people and forces, all of which occur in fluid settings ⁚or contexts that ar* in perpetual states of emergence.

— Apolitical process in which Local, State, Regional and National agencies regularly engage themselves in policymaking about instructional planning. It involves various constituent groups in power negotiations concerning 'a series of choices, often based upon values' (Saylor, et al 1981), 'the allocation of resources towards certain ends' (Pratt, 1980), and 'the creation and distribution of benefits' (Hunkins, 1980), 'unquestionably curriculum determination is centrally concerned with both the use and the allocation of power' (Eggleston, 1977).

—A social enterprise. It is a human process in which the interests, values, ideologies, priorities, role functions, and differentiated responsibilities form the contours of the interpersonal and dynamic contexts in which curriculum decisions are made. It implies the need for some kind of modifications in existing instructional systems. This means, the social fabric must be changed (Smith, et al 1957) that is changes in people—in their desires, beliefs, and attitudes in their knowledge and skill (Miel, 1946).

— A collaborative and cooperative enterprise. The fact that instructional planning involves a variety of technical and human relations skills, and must attend to many different priorities, perceptions, vested interests, and value commitments makes it virtually impossible for individuals, operating alone, to complete the task efficiently and effectively. Cooperation is essential, but decisions about who participates, when and how, must be based upon the distinct function to be served, and the competencies of the participants.

—A disjointed incremental system of decision-making (Kirst and Walker, 1971). It is neither a purely rational and scientifically objective, nor a mew sequentialized and systematic process.

3. Levels of Decision Making

Curriculum making, including decision about what to teach and for what purpose occurs at different levels of remoteness from the learners for whom it is intended. *These levels ar*e Societal, Institutional, Instructional and Personal. At the societal level, participants include Departments, Boards, Councils and Committees at the National, State and Local levels, special interest groups and publishers. At the institutional level! Administrators and Faculty form the major group of participants, whereas instructional (class-room) level refers to subject teachers with specific groups of learners. Persona level is consistent with the view that learners generate their own meanings from thei: class-room experiences, as they are not mere passive recipients of curriculum ends an means (Tyler, 1979).

Different techniques and personnel are involved in curriculum making at thl different levels. Curriculum making at the national level includes development of goal! and objectives as well as textbooks and other instructional materials for wide use. Often curriculum designers at this level do not focus on a wide range of educational goals such social adjustment, self-expression, manual dexterity, and general social attributes! Instead they center on domains and objectives that, are specific to a single subject area of course and specialized personnel-subject specialists, curriculum specialists, and editors-make most of the decisions about what should be taught and how.

Curriculum development at the state level involves the production of curriculum guides and frameworks. These materials are prepared by professional staffs in state departments of education assisted by representative teachers, college and university personnel and curriculum specialists. The purposes and goals set forth in these materials am usually formulated by advisory committees composed of professional educator^ representatives from educational agencies, and selected lay persons.

Curriculum making at the institution level should involve all subject (class-room teachers and administrators, and representative parents and students. Their activities focus on goals and objectives, materials, organization and instructional strategies. Withijn the self-contained class-room, the individual subject teacher of teaching team should develop curriculum objectives and activities that are most appropriate for particuli keeping in mind the general institutional goals and objectives. Although many teachers rely on an outside source, such as textbook or course of study, to determine the concept to be taught, they frequently expand on this curriculum, reflecting on learner response. The relative .importance of the levels of decision-making varies from country to country, state to state, and from one institution to another. However, the central r of the teacher in curriculum development is increasing everywhere, partly because of growing belief that no curriculum derived from outside agencies will be success; without teacher commitment.

A curriculum formulated at one level is not necessarily adopted and implemented at another. John Goodlad and his associates, for example, have proposed five different curricula, each operating at a different level.

—Ideal Curriculum. From time to time, foundations, governments, and special interest groups set up committees to look into aspects of the curriculum and to advise on changes that should be made. Curriculum recommendations proposed by these committees might treat multicultural curriculum, a curriculum for the talented, early childhood curriculum, and career education curriculum. These proposals might represent ideals or describe desired directions in curriculum as seen by those with a particular value system or special interest. The proponents of such ideal curricula are competing for power within the society. It should be clear, however, that the impact off/an ideal curriculum depends on whether the recommendations are adopted and implemented.

—Formal Curriculum. Formal curriculum includes those proposals that are approved by state and local boards. Such a curriculum may be a collection of ideal curricu'a, a modification of the ideal, or other curriculum policies, guides, syllabi, texts sanctioned by the board as the legal authority for deciding what shall be taught and to what ends.

—Perceived Curriculum. The perceived curriculum is what the teachers perceive the curriculum to be. Teachers interpret the formal curriculum in many, ways. Often there is little relation between the formally adopted curriculum and the teachers' perception of what the curriculum means or should mean in practice.

—Operational Curriculum. This curriculum is what actually goes on in the classroom. Observations by researchers and others who make records of classroom interaction often reveal discrepancies between what teachers say the curriculum, is and what teachers actually do.

—Experiential Curriculum. The experiential curriculum consists of what students derive from and think about the operational curriculum. This curriculum is identified through student questionnaires, interviews, and inferences from observations of students.

4. ELEMENTS IN CURRICULUM

4. 1 . Range of Activity

Efforts of Curriculum Developers are directed at producing programmes of study., catalogs of goals and objectives, curriculum guides, course outlines, and lesson plans. They also produce more specific instructional materials : textbooks, taped and filmed programmes, and instructional developer to detail steps for the teacher or child to follow and to prepare tests and record-keeping systems, as well as procedures for training the teacher on how to use the materials.

Before undertaking the production of any material, the curriculum developer will consider time and the intended learners. Will the material serve an hour's lesson, or a year's work ? What are the ages, mental and physical characteristics, and experiential backgrounds of the future users of the materials ?

In determining what the individual or target population should learn, curriculum developers take either a restricted or unrestricted approach. In the restricted approach, the developer looks for possible objectives from within a domain of knowledge and practice Intellectual development, is a typical domain. In an unrestricted approach, the curriculum developer is willing to regard any problem, idea, or situation as having possible implications ?for what should be taught. The curriculum maker's task of conceiving possible and desirable outcomes does not mean that all proposed ends will be accepted and acted upon.

4. 2. Institutional goals :

Those who plan to develop curriculum within a given institution must attend to the nature of that institution, especially to its manifest purposes. One reason is that the selection of an appropriate model or set of procedures for the formulation of objectives depends on the central aim of that institution Vocational and other training schools, for example, are expected to prepare students for specific jobs. Hence, the use of job analysis, a technique for deriving objectives that directly contributes to helping students find jobs and keep them, is warranted. This technique seeks to ensure a match between what the student learns and what he or she will do on the job. The method can be amplifier, of course, with procedures for collecting data that will help one anticipate likely job requirements. Job analysis would, however, be a less appropriate tool to use in the formulation of objectives within an institution whose mission is to further humanistic goals. Such an institution should use a different technical tool to formulate objectives, one more consistent with actualizing learners as individuals.

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Some curriculum leaders do not want curriculum objectives to be shackled to institutional purposes. Indeed, some people believe that curriculum specialists should be trying to change the purposes of institutions. Some experts believe that curriculum developers have been shaped by the bureaucratic nature of the institution, and thus have formulated objectives that serve an industrial model of education with an emphasis on efficiency. They would prefer curriculum workers to -advance both futuristic and humanistic ends, helping institutions focus on getting people to not perceived before and to make contact with one another in stronger ways. In the role of the curriculum worker is not determined by the constraints of educational institutions ; instead curriculum workers create new institutional forms and environments**.**

4. 3. Curriculum Functions :

Before preparing any curriculum plan, whether for a textbook, lesson, course of study, document, product, or programme one should be clear about the functions,, the proposed 'curriculum will serve. Typically, four functions have been recognized :

—Common or General Education. This function is met through a curriculum that addresses the learner as a responsible human being and citizen, not as a specialist or one with unique gifts or interests. Successful general education enables everyone to support and share in the culture ; hence a curriculum worker must decide what the individual needs, in order to communicate with others. The planner must consider what outcomes and experiences all should have in common.

—Supplementation. Individuality is the key to understanding supplementation. Objectives consistent with it deal with both personal lacks and unique potentials. To serve this function, a curriculum might be designed for those whose talents and interests enable them to go much further than the majority or those whose defects and deficiencies are severe enough to require special attention. Such a curriculum is personal and individual, not common or general.

—Exploration. Opportunities for learners to discover and develop personal interests ' capture the meaning of exploration. When well executed, it enables learners to find out that they do or do not have either the talent or zeal for certain kinds of activities. Exploring experiences should not be organized and taught as if their perpose was to train spcialists. Neither should they be conceived as shaddy andt superficial. Exploration demands a wide range of contacts within a field, realization of the possibilities for further pursuit, and revelation of one's own aptitudes and interests.

—Specialization. A spcializing .function is rendered by a curriculum in which the current standards of a trade, profession, or academic discipline prevail. Students are expected to emulate those who are successfully performing as skilled workers or scholars. Entry into such a curriculum requires that students already have considerable expertise and drive. The balance among the different functions, and the curriculum conceptions associated with them varies every few year.

In higher education too, newer curriculum policy favours general education-—often said to be an unwelcome chore. Opposition to general education comes from humanists and academic specialists who (albeit for different reasons) believe it best for teachers and students to select their own areas of interest for study. As a counter to the charge of narrowness, the academic specialist says that by understanding one field in depth, the student will learn to appreciate a wider array of intellectual tools and artistic achievement.

5. Models for Determining what to Teach

A curriculum goal is more than a whim or desire. Its formulation is a complex intellectual operation involving observation, study of conditions, collection of relevant information and, most of all, judgment. There can be no true curriculum ends without an intellectual anticipation and evaluation of consequences. Three models for determining what to teach are discussed in the sub-sections that follow :

5.1 . Needs Assessment Model:

Needs assessment is the process by which educational needs are defined and priorities set. In the context of curriculum, a need is defined as a condition in which a discrepancy exists between an acceptable state of learner behavior or attitude and an observed learner state. Needs assessment is one of the most frequently used ways for justifying curriculum goals and objectives. Several reasons underlie the popularity ot needs assessment as a tool for formulating desired outcomes. Some people are motivated by efficiency. They want to identify and resolve the most critical needs so that resources can be employed in the efficient manner. They want to avoid the practice of trying to do a little bit in many problem areas and solving none of them. Other people are concerned about social disorganization, the lack of consensus among the school community. They see needs assessment as a way to effect shared values and mutual support. The discussion of alternative ends by parents, students, teachers, and other citizens is an educational activity in itself. Other people want new value orientations to be reflected in the curriculum and see needs assessment as a vehicle for influence.

A needs assessment requires four steps : formulating a set of tentative goals statements, assigning priority to different goals, determining the acceptability of learner performance in each of the preferred goals, and translating high priority goals into plans.

—Formulating a set of tentative goals statements : These goals statements are collected from curriculum guides, textbooks, evaluation studies and reports. Typical techniques for eliciting data for needs assessment are live conferences and sponsored debates. Conferences organized by educational administrators and curricula specialists, are an attempt to identify local problems as most people in the community perceive them.

Assigning priority to goal areas : The second phase consists of gathering preference data, typically from parents, staff, students and community members. Members of these groups are given goal statements and asked to rank them in terms of importance. Opportunities are provided for the respondents to add to the set of goals presented.

- Determining the acceptability of learner performance in each of the preferred goal areas : In the third phase either a subjective or an objective approach can be taken. A subjective approach calls for a group of judges to rate the acceptability of present learner status on each goal. No direct measure of the learners with respect to the goals is undertaken ; judges estimate the present status of learners with respect to each goal. Their impression might be gained by whatever they have observed or been l^d to believe by the media and reports from the students and other neighbours. Judges' ratings become indices of need. The objective approach requires actually measuring the status of students relative to each goal. Measures must be congruent with other goals, of course. To this end, instructional objectives within each goal area are selected. Matching assessment devices are chosen and administered to representative samples of students. If the students' level of performance on a measure is less than the acceptable level, a need is indicated^ Levels obtained on each measure are compared. Those showing the widest gap indicate a greater priority,

-Translating high 'priority goals into plans : In the fourth phase, goals that are preferred and for which a need has been identified become the bases for new curriculum/instructional plans. The selection of new target outcomes, goals and objectives has implications for course offerings and for instructional materials and arrangements because the realization of new goals requires new facilitating means.

Technical and philosophical problems need to be resolved before needs assessment can fulfill its promise. One technical problem involves making the meaning of the goals clear so that respondents are choosing the same goals. A vague goal, such as citizenship, creative fluency, or application of scientific methods, indicates only a general direction-On the other hand, making a vague goal specific often results in numerous objectives, so many in fact that no one person could rank them according to their value. It is helpful to ask all who are to rate goals to engage first in common discussion and to ascertain that particular goals or objectives satisfy these three criteria : (1) that the goal is needed for future learning and contributes to fundamental needs, such as making a living and gaining the respect of others; (2) that the goal is teachable; and (3) that it is not likely to be acquired outside the institution.

Needs assessment is frequently used by those with adaptive conceptions of curriculum who see it as a way to ensure that the curriculum is responsive to changing social conditions. It can also be used by social reconstructionist who want not so much to prepare students for changing conditions as to alter the social institutions :that are creating undesirable social conditions.

5. 2. The Futuristic Model :

There is a growing realization that the world of the future is going to be very different from the present, that it will demand new kinds of people, and that the time is short to prepare the citizens of the future. Hence, efforts have to be made to develop educational objectives consistent with this realization and specific enough to imply action. The steps involved in this model are :

(1) A multidisciplinary seminar in which professional educators and specialists, political scientists, economists, and psychologists—meet for several days to discuss possible future developments that would affect curriculum planning.

(2) Judgement of projected trends according to the importance of major changes to society and probability of occurrence.

(3) Educational acceptance for creating the future.

(4) Scenario writing in which a group of writers prepares at least two descriptions. One is a description of what learners will be like if action is taken on the decision in step (3) and implemented by the institutions. The second is a description of the necessary related changes in subject matter, learning activities, curriculum organization, and methods. Attention is also paid to institutional arrangements that will bear on the new curriculum.

5. 3. The Training Model:

Training usually implies narrower purposes than educating. Educating allows for objectives that include the wholeness of a student's life as a responsible human being and a citizen. Training tends to look at the student's competence in some occupation. Although: these two sides of life are not altogether separable, different procedures are used in deriving training objectives than in formulating educational objectives. The training model for formulating proposed outcomes has essentially two functions : one is to reveal particular manpower needs or occupations which the institutions or programmes should serve, the second is to determine the specific competencies that must be taught in order for learners] (trainees) to take their place within the target occupations.

6. Conclusion

Once the goals and objectives are decided upon, the next steps will be to select and develop learning opportunities that are satisfying, and to organise them in the most effective and efficient manner possible. However, curriculum ends should not be narrowly conceived. Objectives that are relevant to the present and likely future conditions, to the concerns of the learners, and to a wide span of cultural resources, are better than those that rely solely on tradition. The final acceptance of educational ends is a value judgment. The decision to accept, however, should be influenced by evidence that shows that the end—the goals or objectives will be of value to the learner, that it is attainable, and that it probably will not be achieved without deliberate instruction.

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USING GAME IN TEACHING MATHEMATICS

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Introduction :

Playing game is a very old and wide spread form of learning. Game is a regularised 'Play activity' which facilitates thinking. Game as a method of teaching and learning have been a recent addition to the science of pedagogy. Use of games in learning situations calls for creative ability and expression as well as imagination on the part of the teacher.

Learning through game has a number of intrinsic virtues. One of these is it* attention focusing quality as it involves students actively in learning situation. Games enable students to see consequences of their actions as players in winning and losing. Students cannot blame teacher for losing their marks or grades in the game. Instead, through the use-of game as method of learning, students are able to understand the way in which the activity is related to the outcome. The teacher's role is thus reverted to more natural one of helper or guide. Another virtue of educational game is the range of skill it can encompass. A teacher's class presentation has fairly narrow range of activities. However, Games can. encompass a much wider range of activities leading to various behavioural, changes. In games, students-work in groups and are actively involved in learning process. Their success is related to the degree of subject matter comprehension demonstrated during the game. The game also increases interaction among students from divergent, ethnic or socio-economic groups as well as between students and teachers. It plays important role in socialization. It also provides motivation for intergroup academic; competitions even within the boundaries of classroom.

Researches on the Use of Game in Education :

Researches.by and large have carried out studies concerning use of games in edu:; tion in urban population. Recent trends however, have indicated change in terms of use games for education of both urban as well as rural population. Most of these researches a done in formal educational systems and at higher educational level. Use of games in the studies is found to have been restricted to indoor games. Both individual as well as t< games are tested for educational purposes.

As early as in 1928, Dewey advocated the use of games as integral part of curriculum '/after noting the link between play and social life. Mead (1934) identified that game has a logic. There is a definite end to be obtained. The actions of different individuals in playing games are related to each other with reference to the end. Mead further indicated that simple games require a student to deal symbolically with anticipated actions of other players towards him/her or to see oneself as others see him/her. This process was seen by Mead as the genesis of social self. Since such anticipation of other's action is a symbolic task. It involves cognitive process. Thus, games can be used to promote cognitive behaviours.

For years games were not used even after their suitability in teaching-learning: process was established by educational and social psychologists. 'The current interest ia educational games does not represent a gradual acceptance of long established teaching technique. Farren (1970) reported that games are effective in motivating students wh® normally were disinterested in school or who tended not to work up to their capabilities. One student characteristic often considered in research with game is academic ability. Different studies have indicated a relationship between academic ability and learning games. It is believed by educational and social psychologists that use of educational games for intergroup competitions. Within classroom promote better interpersonal relations. Dewies and Edwards (1973), using the non-stimulation game for teaching games, increased mutual concern among team members and when rewards were based on performances even more helping relationships were'noted. They further found that lower ability students who played games on equations, exhibited the greatest gains in the interest of divergent solutions and content relevant items. According to Rehage (1976) students prefer games to other classroom activities. The finding holds true for students from elementary school through high school. Patadia (1987) found mathematical game as one of the very effective component of the strategy developed for mastery learning in fifth grade geometry course. In this study, she also found that pupils liked to play the mathematical game very much and that the game helped to lead the pupils to achieve mastery level in geometry course which they studied. This game developed by Patadia, H. J. is designed such that it can be used to motivate students for mastery learning for any mathematical topic. Often use of this game leads students toward achievement of mastery level in that particular topic during which it is used. This game is given below.

Indoor Game Developed by Patadia, H. J. :

This game is basically developed for educational purpose of mastery learning. The procedure and rules for playing this game are as under. The game should be played after teaching of particular unit of course in which mastery is not attained by all students but is. attained by a few.

For playing this game, the class should be divided into two groups, say namely group I & group II without disturbing their sitting arrangement and also irrespective of their scholastic achievement. Both the groups will have one leader each. Here a special care •of selecting the group leader should be taken. The group leader should have mastery over the unit for which the game is being played. The game can be restricted for minimum of 30 minutes. If more time is available the time for both the groups can be accordingly equally shared for playing. For playing the game following rules should be explained in detail by the teacher to both the groups in quite advance. During this game points gained by each group should be counted and written by the teacher on the blackboard.

Rules followed in playing the game :

The available time should be divided in two equal parts, say 30 minutes is the availabe time. Then during each 15 minutes the game will be played as under by both the groups.

1.During first 15 minutes of the game, group I will ask the questions to group II and group II will give answers to these questions. For every correct answer one point will be given to group II. In case of wrong answer two points should be given to group I.

2.For asking the questions certain rules are to be followed as under, (i) Except the group leader all pupils of the group I who-wants to ask question would raise their fingers. Then the leader of the group I only would decide as to who will ask the question, (ii) The pupil of group I who would ask the question to group II will not put the question to group II in general but would also point out the pupil of group II who is supposed to give the answer. (Here chances are more that the question is asked to the lower achievers) (iii) If the answer given by the pupil of group II is correct then one point will be gained by the group II. But if answer is wrong then two points will be gained by the group I.

Further in the case of wrong answer given by the pupil of group II, the leader of group II would ask the pupils of group II to raise fingers who know the answer for the same question asked by the pupil of group I. Then the leader of group II would take the decision about—who will give the answer from those who raised the fingers willingly to the question earlier asked and wrongly replied by one pupil of group II. (Here most of the time, it is observed that the pupil selected by the group leader II for giving answer has the mastery over the topic from which the question is asked). In this second attempt, if the answer given by the pupil of group II is correct then one point will be given to group II.

In case, the given answer in this second attempt is also wrong then again two points will be gained by the group I. Further in such case, the last chance will be given to group II to answer the same question. But in this third attempt the chance for giving the answer will be given only to the leader of the group II. If in this third attempt the answer given is correct then point will be given to group II. But if in this case also the answe r given by the leader of group II is wrong then points will be given to group I; and then the pupils from group I who asked the question is supposed to give the correct answer to his/her question. By chance, if at all the answer given by him/her is an incomplete answer or wrong answer then minus five marks will be given to group J. Further in such case the teacher in the class observing this game is supposed to give the correct answer to that question asked by group I and would explain fully about the question and the answers given by different pupils and the mistakes they committed in giving the answer.

3. In case the answer given by the pupil of group II to the first question of group I is correct in the first attempt itself, then again the second question will be asked by other pupil of group I to some other pupil of group II in the same way as earlier. If correct answer is given to this second question then one point will be given t® group II, Again the third question will be asked by some third pupil of group I to some third pupil of group II and so on.

4.Here in this process of asking question and giving answer a special care is t® be taken that no pupil would get a chance more than once to ask questions and similarly the pupil to whom the question is asked is also not asked again. Due to this restriction, almost all the pupils get chance to participate in the game.

5.In case of any incomplete or wrong answer, the same procedure mentioned under 2 (iii) is to be repeated.

6.During the whole game each group leader is also supposed to control his/her group in the sense of discipline. If he/see fails to maintain the discipline in his/her group, minus one point is to be given to that group who would make noise or distrub the class or behave in an undisciplined way. (Due to this rule, class discipline can be nicely controlled).

7.After the completion of the first 15 minutes, next 15 minutes will be given to group II for asking question to group I. During this second phase of 15 minutes, the same process as mentioned earlier for asking questions, giving answers and assigning the points will be repeated except that the role of group I and II are interchanged for asking, the questions and giving the answers.

After the completion of the second phase of 15 minutes the game is to be declared over and points gained by each group are to be counted by the teacher ; so that the winning group can be declared.

When Patadia (1987) used this game as one of the component in the strategy t*» mastery learning, it was found that throughout the game maximum participation of lower achievers (i. e. who did not achieve mastery) was involved ; in giving -answers to the question asked by pupils of another group. All the pupils were eagerly waiting for their turn to participate in the game and that too without disturbing the class and school atmosphere. Also pupils were specially happy about the clarity given for their all doubts regarding the wrong question answer. Also it was observed that a sort of confidence was being developed by the participants involved in the game and showed their interest in playing this game often. Also a sort of team spirit was developed due to this game which encouraged the pupils for healthy competitions, which in turn made them aware of the fact that unless all had mastery over the topics taught, it was difficult to win the game. This awareness made them to learn more and attain mastery over the topics taught.

Due to this game two purposes were served. The first was that too much interest was created in learning the course taught by the teacher and the second was that the pupils were motivated towards mastery learning.

This game described above can be used for any educational topic for pupils of various classes ranging from fifth grade pupils to secondary and higher secondary pupils as it helps in the achievement of many important aspects, such as

1. It helps in seeking and focusing attention of students on subject matter.
2. It arouses the interest in subject matter to be learnt.
3. It helps the teacher to motivate the students to learn more.
4. It promotes and sustains the interest of pupils in learning.
5. It helps in self-learning, reinforcement and evaluation.
6. It helps in gaining and retaining knowledge as well as in its application.
7. It helps in revealing the students' attitude towards material to be learnt.
8. It helps in achieving educational objectives.
9. It helps in drilling the educational materials.
10. It helps lower ability students to learn with ease and fun and gain as much as the higher ability students learn.

Especially the above mentioned aspects are very much important in teaching c mathematics as they help to reduce the abstract .nature of the subject to some extent an make the students to learn the difficult things in trivial way. Hence it is always advisable to encourage the mathematics teachers to use mathematical games whenever is possible and feasible.

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REVIEW OF RESEARCHES ON MOTIVATION OF TEACHERS FOR INSERVICE EDUCATION

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The present technetronic age has made education to assume its unique role more urgently than before. The democratic style of living and the socialistic pattern of society require education to relate itself to life, needs and aspirations of the people. Various reports of Commissions and Committees have considered education as the single important and effective instrument that ushers in an era of change in all aspects of life. They expect it to ensure growth from within and without. According to them no other factor of development influence the quality ot life more than education does.

Analysis of the process of education indicates that the teacher factor plays a significant role. As a candle burns to emit light a teacher similarly has to undergo continuous and strenuous programmes of professional growth to be vitalised. Such professional growth enlightens himself and help enlighten his clientele. It is a fact that no knowledge is complete, no growth is absolute, no attainment is ultimate and no modification of behaviour is perfect. All efforts to acquire knowledge, pursue growth, achieve purpose and modify behaviour should be continuous.

Preservice Education

Growth programmes for teachers have preservice and inservice aspects. Preservice needs in teaching profession is as important as it is in professions like medicine, engineering and industry. For an entry into the profession, a teacher is required to acquire a license -a merit certificate.

This he obtains after completing a definite course in a teacher training institution recognised for the purpose. Without such training and experience a teacher feels defendant to face a class and fails to justify his job responsibility.

There is no uniformity in all preservice education courses prevalent in different training institutions of the country. Some of its significant variables are its purpose, duration, content, nature of the programme and age, sex and qualifications of its target population. Whatever skill, knowledge and understanding is attained at preservice stage

is supposed to be the assets of the teacher stored in him for use in future teaching learning situations, The purpose of the preservice education is defined as "Preparing the novice to participate in his country's educational system effectively by enabling him to acquire necessary academic competence, skills and attitudes." (Commonwealth Secretariat, 1974. p.33) Time brings sea-change in education as it is in other fields of life, particularly, in developing countries due to explosion of knowledge and development in technology. These along with sundry factors make preservice preparation inadequate to meet the challenges that a teacher faces in the class-room and in the community.

Inservice Education :

The second aspect of teacher education programme is the inservice training. Inservice is a post-entry requirement oi a teacher. It is required for his personal growth. Until the last decade it did not attain much national importance. Even to-day there does not exist adequate emphasis on inservice education. Sometimes it is considered as an "emergency service compensating for deficiencies in the educational system." The demand on a teacher in a society undergoing metamorphic changes make inservice education the core-essential of his career. It is true that all knowledge and skill required for a teacher cannot be acquired during the short period of preservice training. Hgwever broad and extensive it may be, it cannot produce the best teacher as such. Inservice training is not meant also for simply supplementing the deficiencies or erosion of preservice experiences rather, both are inseparable components of a single continuous process. "Teacher education is a continuous process, Sand its preservice and inservice components are inseparable. As the first step, the system.of teacher education will be overhauled." (Ministry of Human Resource Development, 1986, p. 26)

Many elements of inservice programmes of education are considered more relevant] appropriate in the post-entry stage of the profession than in pre-entry preparation stage.-and "Broadly conceived inservice education includes all activities engaged by professional] personnel during their service and designed to contribute to (Professional) improvement." (Yarger, 1982, p. 883).

Motivation : The Potential Component:

Although preservice education and inservice education are considered as twd sides of a coin in the sense that they are essential stages of one and the same process educational system, it is a paradox that teachers in service in whose personal and professional interest these programmes are arranged need to be motivated to participate. It is tru that public image of teachers enhances by their involvement in professional activities in spite of that teachers are required to be motivated in several ways.

Motivation is one of the important components of inservice education programmes. The extent to which it influences the post and pre-entry behaviour of participating teachers vary from intrinsic metabolism issues to intricate financial issues. The worth proportion, and extent of these issues have been studied by researchers. The findings and recommendations of these studies point out that incentive measures were partially successful and were a 'sure fire* techniques to attract personnel for inservice programmes. However, the role of motivation as a potential variable in the inservice education programme is often illustrated through an equation: MCxOC=S in which MC stands for motivation component, OC stands for other components of the programme and S stands for success of the programme. It appears from the equation that when intensity of MC and OC remain maximum the success becomes highest. Now, intensity of other components of the programme remaining constant the degree of success depends upon the degree of motivation of the personnel undertaking training. When other components of the programme have no intrinsic merit the degree of success goes down further and further. Therefore, the role of motivation is estimated keeping OC constant. At this point of OC with change in the degree of motivation there is variation in S in an inverse manner. Variation in motivation takes place due to interaction of various forces in and without: the component. Of all the forces the three main motive forces that attract teachers to participate in professional growth programmes are inducement, compulsion and stipulation. Unless motivated properly the participant teachers cannot be benefitted much. It is said that one can drag a horse to water, but one cannot make it drink. Similarly, teachers* can be forced to join inservice programme but force cannot motivate them to involve themselves in the programme, be it either professional or personal growth. A review of studies conducted in this area is given below :

Review of Literature :

Review of literature is a pre-requisite of research. Identification of a problem for research and its operational scope cannot be determined without study of past literature in the related field. When the field is located .its specific components are also to be found out. The problem of inservice education and its components are highly elastic. The scope of this review is only limited to its motivation component.

Stoops (1941) conducted a study on professional growth of teachers in service. 81 percent of the sample indicated that teachers were motivated for inservice growth programmes through inducement and assignment preferences, leave of absence, opportunities for travel, tuition for workshop, shortened probationary periods or better indicated tenures. 51 percent indicated salary increment as a means to motivate participants,

N. E. A., Research Division (1945) in one of its studies found that some of the motivating forces that stimulated teachers to participate in inservice programmes were higher salaries, opportunities for promotion, desire to obtain competence in teaching skill, good leadership, good working relationship of the staff and group interaction. These motivating forces had combined influence on' teacher participants. Recognition of good work, freedom on initiative, atmosphere of good will, opportunities for co-operative planning and handsome salaries were considered a motivating factors for teacher participants in self-improvement programmes. School systems where there was low morality, inservice programmes having unattractive activities, lack of recognition of good work, interference of supervisory staff, non-co-operation oi staff including the principal and poor curriculum content did not motivate rather discouraged teachers to participate in inservice education programmes,

Goodman (1946) in a study entitled "Incentive must come from within" found that growth could not come by force. Teachers wanted to have a voice in developing policies regarding requirements of their professional growth.

N. E. A„ Research Division (1947) in a study of legal status of Public School teachers found that teachers were motivated to attend institutes for inservice training being required under compulsion, inducement and professional growth programmes. Teachers were paid for the days of attendance which was made compulsory in almost all States of the country. Participation in reading courses, study groups and teachers' meetings were also required by some State Boards.

N. E. A. Research Division (1952) indicated that sometimes school systems motivated teachers to take part in inservice programmes by granting leaves of absence.

Mead (1954) and Peterson (1956) found that increased salaries induced teachers to accept programmes for professional growth with great interest.

Applegate (1957) found that attendance in Summer School was the most frequently accepted activity for advancement of salary schedule.

Buch (1976) reported that motivating factors varied from the use of evaluative criteria for teachers to monetary rewards.

OECD (1976) in a study on inservice education in U. K. pointed out that there were three main incentives for teachers to attend INSET courses namely, intrinsic merit of the course, academic awards, and improved career prospects. Financial gain was not considered as a major factor although it was taken as a fourth incentive measure.

Mohanty (1988) reported some motivating factors such as : (a) travelling allowance to attend programmes conducted in out of school situations, (b) daily allowance, (c) certificates / diplomas for successful completion of inservice courses, (d) promotional benefits, (e) increments / increase in salaries / special pay provision, (f) license to continue as a teacher or to act as a head teacher / school inspector / supervisor, (g) prizes.

Findings of the above studies have been enumerated in the table given below :

Serial. No.	Aspects	Investigators
1.	Advancement and assignment preferences	Stoops (1941)
2.	Leaves of absence	Stoops (1941), NEA Research Division (1952)
3.	Opportunities for Travel	Stoops (1941)
4.	Tuition for workshop	Stoops (1941)
5.	Shortened probationary periods	Stoops (1941)
6.	Better tenures	Stoops (1941)
7.	Higher salary	NEA Research Division (1952), Mead (1954), Peterson(1956), Applegate (1957) and Mohanty (1988)
8.	Opportunities for promotion	NEA Research Division (1952), Buch (1967), OECD(1976),and Mohanty(1988)
9.	Desire to attain competency in teaching skills	NEA Research Division (1945), Mohanty (1988)
10.	Good relationship	NEA Research Division (1945)
11.	Good relationship of staff and group interaction	NEA Research Division (1945)
12.	Freedom on initiative	NEA Research Division (1945)
13.	Recognition of good work	NEA Research Division (1945)
14.	Co-operative planning	NEA Research Division (1945)
15.	Voice in developing policies	Goodman(1946)
16.	Compulsory attendance	NEA Research Division (1952),
17.	Voluntary participation	NEA Research Division (1952), OECD (1976)
18.	Payment for days of absence	NEA Research Division (1952),
19.	Intrinsic merit of the course	OECD(1976)
20.	Academic awards	OECD(1976),Mohanty 1988)
21.	Financial benefits	Mohanty (1988)

The table enumerates as many as 21 factors which either have aroused or sustained or directed teacher participation in inservice programmes. Opportunities for promotion and increased salaries have been effective incentives—the motivating factors for taking part in the programmes. The factors which have greater priority over others are leaves of absence, desire to attain competency in teaching skill, voluntary participation and academic awards. The providers / organisers / promoters, whether private or public, should consider these parameters prior to organisation of inservice programmes.

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TEACHER EDUCATION - TIME FOR RETHINKING

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The success or the failure of the new system of education which the Government of India have decided to introduce throughout the country largely depends on the quality of teachers who are always the centre of the educational process, Challenges of Education : A Policy Perspective (1985), the National Policy on Education 1986 and the Programme of Action have ushered in a new era in the field of education. Then national efforts need positive contribution from all concerned. It is the opportune time for the teacher-education institutions to do a lot of re-thinking both collectively and individually so that they can determine how best can they serve the social challeges. The burning questions to-day are : Has the teacher-education programme been successful in producing more effective classroom teachers ? Have the schools accepted the methods being taught in the teacher-education institutions ? Can the teachers after training, practice whatever is being taught to them in the classroom.

It is the time for self-introspection for those who are associated with the teacher-education programme. Such an exercise will provide answer to many questions related to the curriculum, method of teaching used in the teacher education programme and the needed research in this area.
The revision of the teacher-education curriculum should receive utmost priority. The present curriculum with minor changes here and there remains almost the same as had been handed over to the educationists by the British administrators. No sincere effort has been made to tailor the curriculum according to the life, needs and aspirations of the people of the country. The result is that there is a wide gap between the teacher-education programmes and the school practices. It is an established fact that the methods propagated by the teacher-education institutions are not, in general, being practised by the trained teachers. Rather the new trained teachers are discouraged by the experienced teachers and the headmasters. One of the reasons put forward for the non-implementation of the Teacher-education college methods is that these methods cannot be practised in the prevailing situations in most of our schools. How can one expect the teachers .to ^prepare four to five page lesson plans when they are teaching about 30 to 36 lessons in a week ?

There is undue emphasis on theoretical studies in the teacher-education programmes* The students as well as the student-teachers give more weightage to the preparation of theory papers while preparing for the final examination which has remained with these institutions the only and the ultimate measure of evaluation. Therefore, the teacher education institutions have failed to ensure a careful, sincere and conscious involvement of student-teachers in experiences that are essential for an effective teacher.

This situation has forced even the most enthusiastic teacher-educators to fall into the rut and they prefer to remain helpless observers. Some others prefer to make the best use of the prevailing chaotic situation and are contributing to the already confusing situation by providing the student-teachers with readymade notes that are considered essential for assuring them success in the final examination. Because of the system of external assessment the student-teachers do not study throughout the session and prefer to go through cheap bazar notes to achieve success. Careful planning of experiences, systematic preparation for acquainting the teachers with modern techniques of classroom organization etc. are conspicuous by their absence. The practice teaching programmes have come to stay as mere rituals to be performed religiously by each student-teacher keeping an eye always at the final show (or farce) which they have to present before the Pandits who have neither time nor patience to witness the show.

There is, therefore, a strong case for complete overhauling of the teacher-education programmes so that the Teacher .Education Institutions can keep pace with the revolution that the country has decided to launch through the National Policy on Education 1986 and the Programme of Action. No patch work can keep them alive for a long time. The teacher-educators should either make sincere efforts to improve things or quit.
The teacher-education programmes should be enriched and made more realistic to prepare more effective teachers. The society 'can no longer tolerate Institutions situated in ivory towers. Those who are responsible for framing the Teacher-education Curriculum must remember that it is a professional course and not a pure academic course. Therefore, undue stress need not be put on the theoretical aspect of the course. More emphasis, should be laid on preparing skilled teachers who are ready to face the challenges which the new system of education has brought for them.

Some suggestions :
The revision of the curriculum must not be done in a hurry. Researches conducted in the area should be looked into and proper planning be made to revise the curriculum. The teacher-educators from all over the country should be involved in the process of curriculum construction. One thing that is to be kept in mind is that the duration of the training period is o^e academic session i. e. about ten months. It 'cannot be extended at least for the present. Therefore, the curriculum framers must consider:

(a) the total time available and how best to utilise the time;
(b) ways and means to bring the training courses closer to the actual school situation;
(c) as to how to put the teacher-education institutions in on thread.

The writer attempts to give some suggestions to set the ball rolling. They are :

1.In most of the teacher education curriculum 70 to 80% weightage is given to the theory papers and only 30 % to 20 % to practical aspect of the training programme. The writer strongly feels that the weightage in terms of marks as well as time spent on teaching theoretical aspects must be reduced and the time thus saved should be allotted to providing practical experiences to the student-teachers. The writer proposes fifty-fifty, if not more should be the basis.

2.The units to be included in the Theory papers should be only those that have a direct bearing on what the student-teachers will be required to do in the schools when they join as regular teachers.

3. Before the academic session begins the student-teachers should be oriented to the task ahead. A visit to the local schools would be helpful. The student-teachers will get acquainted with the programmes of the school. They should be asked to read at least one good book on education and submit a review of the same in about 300 to 400 words. Discussions may be organized on the reviews submitted and presented.

4.Seminars should become an essential feature of the total teacher . education programme. This will give them an opportunity to share their experiences with others.

5.Teaching practice as being organized these days through strong lessons, does not provide adequate experiences to the student-teachers. The student-teacher is the most unwanted person in the class and s/he does not feel at home in the artificial situation. It is suggested that a well thought out as well as well planned programme should be launched so that the student-teacher is attached to a school where s/he works as a regular teacher right from the morning assembly till the close of the school day. A group of students may be attached to a school under the supervision of the college staff. The student-teachers and the supervisor(s) *must understand that during the period the student teachers are attached to a school, they are under the control of the Head of that school. This would involve the whole school in providing proper experiences to the student-teachers.

6. In the mad rush to enter the twenty-first century first, the teacher educators are giving undue stress to the teaching of Educational Technology. It is most unfortunate that in a developing country like India, the Chalkboard (usually called Blackboard)—the primary visual aid is not receiving the attention it ought to from the audio-visual experts, teacher-educators and the school teachers. The writer firmly believes that the chalk-stick and the chalkboard are the best friends of the teacher. His teacher Prof. C. S. Bhandari of G. C. P. I., Allahabad, used to stress in their classes that, "a teacher who can effectively teach with a chalks tick and the blackboard is the best teacher". The writer cannot find better words to press for the well-planned proper training in Chalkboard use than that of Dale's: "The Chalk-board is not itself a visual material but a vehicle for a variety of visual materials."

7.The teacher-educators must be prepared to practice what they preach. They cannot convince the student-teachers of the importance of participatory approach through lecture method. An integrated approach to the whole problem of learning is necessary.

8.The methodology of teaching school subjects must give place to content-cum-methodology approach. The Graduates and Post-Graduates must learn the skill of organizing the content according to age, ability and aptitude of the children of the class.

9.The teacher educators must have faith in the dynamic methods of teaching. They must have conviction that there is nothing like the method of teaching a subject. The student-teachers must develop a scientific outlook towards the learning process and the faculty of the teacher education institution has to shoulder this responsibility. The student-teacher must acquire the competence to select the method or methods which would suit the classroom situation the best. No human being can visualise all the situations which might be faced by the teachers in the classroom. Therefore, it would not be wise to suggest patent method(s) for teaching a subject or a topic.

The teacher-education programme must overhaul itself so that the targets set, fey the National Policy on Education 1986 and the Programme of Action can be achieved, The need of the hour is a heart searching by those who are associated with the teacher-education programme. A ' 'new look" is a necessary pre-requisite to the educational revolution that the country has launched recently.

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BOOK REVIEW

Multiple Shift Schooling By *Dr. Mark Bray,* Department of Education, University of Hong Kong
Published by Commonwealth Secretariat, London.
1989, pp. 105.

Multiple Shift Schooling is one of the series of publications being brought out by the Commonwealth Secretariat, London on the theme "Resources for Education and Their "Cost Effectiveness", as suggested by the Ninth Conference of the Commonwealth Ministers of Education held in Cyprus in 1984. Dr. Bray has skillfully discussed the theme with the help of examples from various countries within and outside the Commonwealth. It is a very useful reading material for educational planners and administrators. The book has four parts, T'he first part discusses the framework for the analysis. The second part discusses determining policies related to economic, educational and social factors. The third part discusses the working of the multiple shift schools in relation to areas of school organisation time table, staffing, management and quality. The concluding part focuses on alternative models and cost effectiveness. The author has provided a very useful annotated bibliography at the the end of the book.

Reviewer : Dr. Sunil Behari Mohanty

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