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Social

TECHNOLOGICAL REVOLUTION IN EDUCATION IN INDIA

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Abstract

Education, normally one of the largest employers in any country, is one of the industries which have not undergone a technological revolution. We must help to move it out of the handicraft stage. With the terrible and growing shortage of qualified teachers all over the developing world, we must find ways to make good teachers more productive. This will involve investment in textbooks, in audio-visual materials and above all the use of modern communication techniques (radio, television and film) for teaching purposes." This is remarked by Robert F. Me Namara, former President of the World Bank addressing the Board of Governors in 1968.What is the nature and scope of this Technological revolution" to be brought about in the industry of education as visualised by the world famous economist? Why has he emphasized the use of modern communication techniques for teaching purposes? In what way will this contribute to community education or solve the problems of the community? These are the questions that have to be pondered upon.

Keywords: Technological; Education; Revolution.

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1. Introduction

1.1. Technological Revolution

It is beyond doubt that technological revolution in education will occur only through educational technology which in a broader sense includes the entire process of curriculum development, the setting of objectives, the planning of curricular programmes and practices, the try out of new methods and materials, the evaluation and feedback of the system as an integrated whole and resetting of objectives on the basis of findings and experiences out of evaluation and innovations. Any kind of educational improvement should be preceded by suitable curriculum reforms. Curriculum is the sum total of learning experiences provided by the school, it is what we teach, what the pupils learn, what we examine for and what we award degrees or diplomas when students pass through, But we should make it relevant to and continuous in consonance with the current needs of the present and probably challenges of the future. It must be defined in terms of what and how we want the students to know, do, think, feel and appreciate when they are in or

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outside the school. While determining the objectives and defining their respective learning experiences we should also keep in mind what kinds of knowledge, skills, thoughts and feelings the children bring with them when they come to the school. At the same time we cannot close our eyes to what is happening to them outside the school or inside the community where they are likely to go and work after their schooling. Seth Spaulding (1970, p. 11) Director UNESCO Department of School and Higher Education has rightly observed that one of the reasons for curriculum reform has not been continuous and the curriculum has not been entirely relevant either to what the student brings to it or to what the students expect from it. The student in today's secondary school and university is a very different kind of person from the student of a generation or two ago. The ''information explosion" has enormously affected the younger generation; the secondary school student probably learns more out of school than he does in the school and the university student often feels much closer to the problems of his nation than does the professor who lectures to him, With a view to making the curriculum relevant and meaningful, not only necessary reforms have to be brought about, but also suitable media and methods are to be adopted without delay. This necessitates greater psychological and pedagogical preparedness, more social concern and community involvement, a new scientific attitude and a coordinated or integrated approach to the educational process as a whole. Here comes in the scope of Educational Technology which seeks to have a happy conglomeration of all the media, methods and materials used for better teaching and learning. Thus Educational Technology comprises methods from textbooks teaching to micro-teaching and deals with media and materials ranging from chalkboards to television or computer, as a matter of fact, technology of education involves books and blackboards, models and maps, tapes and slides, radio and televisions, projectors and computers. It includes both 'hardware' and 'software' and audio as well as visual materials. It has rightly been pointed out by Geoffrey Hubbard (1974, p 14) Director, National Council of Educational Technology, England "Educational Technology is the complement of curriculum reform concerned with the Method where curriculum reform is concerned with the content... Given an acceptance of the concept of educational technology as the process of improving learning process, we are faced with the problem, of encouraging innovation in an educational system whose greatest strength is in decentralisation and autonomy." This leads us to think that the methods of learning i.e., learning how to learn the habits of self- study, independent thinking etc., have to be emphasized. The learner has to develop a continuing concern for his freedom and his self ¬responsibility and his quest for self-fulfilment should come from within and without. The International Commission on the Development of Education 1971 (UNESCO P. 75) has rightly observed, ''Education is all the more democratic when it takes the form of a free search, a conquest, a creative art; instead of being as it so often is, something given or inculcated a present or a constraint." The method of independent learning or self-study is thus a direct corollary of the use of educational technology. Hence the technology of education is not only more scientific, but also more psychological and more pedagogical. With the advance of science and technology there are now several learning aids which have revolutionised the learning process in particular and education as a whole. Technologies such as computer-mediated communications, electronic publishing, intelligent tutoring systems, groupware, multimedia, intelligent agents, videoconferencing, video-on-demand, and virtual reality are maturing and converging to create "virtual classrooms." Virtual classrooms free students and faculty from having to be in the same place at the same time, making the traditional four years of campus residency unnecessary. Administrators who ignore

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the implications of these technological trends risk the very existence of their institutions (Donald, B.1994).

2. Why the Use of Modern Technologies?

Modern would is faced with two crucial problems: (1) Knowledge Explosion and (2) Population Explosion. New Frontiers of knowledge are being opened every now and then and more knowledge is being added to the already accumulated mass of information through ages. Similarly population of the world particularly in the developing countries is increasing by leaps

3. Educational broadcasting

The importance of educational broadcasting cannot be overemphasized for accelerating the pace of national development in general and bringing about qualitative as well as quantitative improvement of education in particular. This is more significant in developing countries like India where the socio-economic condition is yet to reach a take-off stage and universalization of elementary education is still to be realized as per the Constitutional Directive. Therefore, there has been an imperative need for furthering national development in all facets of life and for providing increased access to education, both through formal and non-formal systems and reducing the massive wastage and stagnation at all stages of education. Educational broadcasting is required to be a potential instrument of educational advancement and an integral component of educational inputs in traditional as well as distance or other alternative learning systems for different categories of learners.

4. Attempts at the International Level

The Asian Programme of Educational Innovation for Development (APEID) technical working group in its draft final report in the context of formulating guidelines for the development of educational broadcasting services has laid down the follow ing for consideration:

- Guidelines should have application to the universalization of education and the special needs of rural communities.
- There is a great variety of administrative patterns and in the stages of development in educational broadcasting among member countries.
- Advice should be practical of implementation, and should have a proper regard for limits of financial and other resources.
- Radio is a cheaper form of broadcasting than television, both in the production and transmission of programmes and in the facilities required for reception. It has the advantage of greater penetration of the general population.
- Notwithstanding the previous statement, television is a powerful educational tool and must be given full consideration by governments and ministry policy-makers when determining priorities for the allocation of resources.

5. Consideration at the National Level

In view of the above considerations, the APEID group was rightly conscious of its limitations and has aptly observed that the guidelines that were laid down by it are not either general

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principles or specific statements that are not applicable to any one country or educational system Therefore, it was felt necessary to discuss and spell out these guidelines in further detail of specificity in national seminars or workshops of various Asian countries. In India, such a national workshop was held at New Delhi from 1 to 6 December 1980 under the joint collaboration of the Ministry of Education and Culture as well as the UNESCO's APEID. This workshop in the fitness of things specifically viewed educational broadcasting including both radio and TV programmes:

a) as a means of motivation by informing and encouraging people to participate in national development,
b) as a major component of the non-formal education system by providing an alternative approach to the education of out-of-school children, youth and adults,
c) as a direct instructional medium dispensing with the need for an intermediary,
d) as an enrichment of the formal system of education where it can fill instruction gaps, up-to-date knowledge and bring in new learning experiences,
e) as a training component for teachers (instructors) and supervisors,
f) as a means of imparting vocational (agricultural and industrial) and professional (medical and engineering) skills.

6. Nature of Educational Broadcasting

The national workshop thus wished that educational broadcasting would be multipurpose and sought to make multi¬pronged efforts for educational advancement. It would not only move away from narrow syllabus-based approaches, but also would try to reach the learners directly. It would aim at reduction of load and drudgery in the classroom and make teaching-learning process interesting and effective. Both radio and TV programmes would serve all categories of learners and provide all kinds of learning experiences-knowledge, understanding, appreciation, attitude and skills. The new curriculum with emphasis on SUPW, citizenship training and national integration could be better realized with the help of educational broadcasting.

7. National Priorities

In planning and production of programmes both the media- radio and television-would emphasize the following national priorities.

a) Universalization of elementary education, both formal and non-formal,
b) Non-formal education for adults, linking education to economic and social tasks,
c) Development of vocational and professional skills,
d) Training for citizenship,
e) Popularizing science with a view to developing a scientific outlook,
f) Promoting national integration, and
g) Providing information about themes of national importance-population education, energy conservation, preservation of wild life, environmental sanitation, nutrition and health.

8. Training and Management

With a view to realizing the above national objectives and priorities, it has been decided that educational broadcasting should form an integral part of the total educational system. It means

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that the responsibility of policy and management of educational broadcasting should be with the educational authority. It has been suggested that advisory bodies and educational technology institutes should be set up at the national and state levels for extending advice from time to time and taking up the management. These advisory and executive bodies should take up responsibility for all kinds of educational media. This responsibility must include formulation of policy, programme planning, production, utilization, evaluation and feedback, training of personnel, providing support materials and publicity. This must also comprise administration and accounting of the organization. Although these institutions should be part of the educational infrastructure, they should have operational freedom. Educational broadcasting by its very nature must address itself to mass audience. It must also serve the national interests and goals, But it is also necessary that it should take cognizance of local needs, language differences, cultural variety and other similar factors. Therefore, besides national framework within which the priorities, broad areas, themes, objectives, utilization and evaluation procedures of educational broadcasting should be spelt out, similar action should also be taken up at regional, State and even local levels. Planning, production and evaluation should be a collaborative venture involving curriculum developers, subject experts, teachers, scriptwriters, social scientists and producers. Even audience would be involved in planning, production and evaluation for ensuring credo and reality in programmes.

9. Conclusion

In order to ensure optimum and effective utilization of educational broadcasts, the national workshop suggested that all schools and learning centers should be adequately equipped with listening and viewing facilities. Although the government should take up the main responsibility for this, public funding, participation of the community and national as well as international voluntary agencies may also be explored adequate steps should be taken for maintenance and operation of the receivers. Even necessary incentives may be made available to teachers for bringing their own radio sets. Educational broadcasting should also form an integral part of teacher education programme. Besides, in-service training courses should be organized for orienting the teachers and supervisors media; various kinds of support materials should also be provided to teachers and students by the educational authorities. Research and evaluation should form a significant part of the total process of educational broadcasting. Both short-term as well as long-term, formative and summative research studies should be conducted for better utilization, evaluation and feedback.

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